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SEPTEMBER 2006



Get a dual core PC today — these powerful PCs start at just \$1500.



The terrible ten

Just when you think your PC is patched, along comes 10 new security threats.



Time for a tablet?
Tablet fans will love the new HP tc4400, but is it the medicine for notebook stalwarts?

FEATURES

38 THE 100 BEST PRODUCTS

Powerful computers, handy services, tiny utilities — our editors' top picks include all these and a whole lot more.

54 ONE PC, TWO BRAINS

Think that dual-core PCs are out of your price range? Straight from the Test Centre: four economical dual-core desktops that deliver plenty of power.

66 PC CASES

So you've got the perfect PC? All you need now is the perfect case to house it in. We reviewed six cases with all the features to suit your PC's needs.

71 CHEAP NOTEBOOK TWEAKS

Get more out of your notebook with these easy tips and tweaks. As well as simple upgrades, our list of accessories will really boost your mobile.

74 10 BIGGEST SECURITY RISKS

The scariest 10 new threats and how to protect your PC against them.

STARTUP

11 INDUSTRY NEWS

Important issues and events in the world of IT.

16 QUICK TAKES

Previewing the hottest new high tech each month.

EVERY MONTH

- 6 FOITORIAL
- 8 READERS FORUM

140 BACKBYTES

FIRST LOOKS

HARDWARE

- 19 NOTEBOOK Sony Vaio AR18GP
- 20 SEARCH TOOL Google Mini TABLET PC HP Compag tc4400
- 24 PCs Altech Commander; PacStar AMD Gaming No.1
- 26 MOTHERBOARD ASUS P5W DH Deluxe
- 28 PROJECTOR BenQ CP220
- 30 NOTEBOOKS Fujitsu LifeBook Q2010; Acer TravelMate 3010
- 32 DIGITAL CAMERAS Ricoh Caplio R4; Kodak EasyShare V610
- 36 TV TUNER AverMedia AverTV DVB-T Volar DIGITAL AUDIO PLAYER Samsung YP-Z5

2 AUSTRALIAN PC WORLD SEPTEMBER 2006



Get sketchy Google has propelled the useful CAD program SketchUp into the bigtime.



Take the race to your kitchen table with the latest version of Micro Machines.

HERE'S HOW

101 HELPSCREEN Your PC questions answered

104 HASSLE-FREE PC Top solutions for e-mail issues

105 BUGS & FIXES

Is your media player a danger?

107 WINDOWS Accessing your OS remotely

110 LINUX Virtual PCs and Dapper Drake

112 OFFICE

Take control of your inbox 114 IMAGING

You want Sketchup with that?

116 VIDEO

Quick, call for an ambience!

119 Networking How to configure Windows RDC IN THE TEST CENTRE 208 REVIEWS THIS MONTH

- → Dual-core PCs from \$1500
- Hottest cases for your PC
- → Tests: Intel's Core 2 Duo CPU
- → First: Sonv's Blu-ray Vaio

90 PCS PCs from \$1500-\$3000 and over \$3000





91 MEDIA CENTRE The top five media centre PCs from \$2649

92 NOTEBOOKS The top five under \$2500 and the top five from \$2500-\$4000





94 WIRFLESS ROUTERS Top 9 wireless routers. starting from \$75

95 ADSI 2 MODEMS The top nine modems for ADSL2 Internet



96 LCD MONITORS Seven 19in LCD monitors from \$449

97 GRAPHICS CARDS The top 10 graphics cards from \$251



98 TV THNERS Nine of the hest TV tuners

99 PROJECTORS Ten projectors for work and play





22 OPERATING SYSTEM Windows Vista Public

31 SECURITY SOFTWARE Kaspersky Internet Security 6.0 33 VIDEO SOUNDTRACK SOFTWARE Sonv

Cinescore 1.0 34 DRAWING SOFTWARE Serif Draw Plus 8.0



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digital movies to a size that will allow you to burn to compact disc using the built-in burner. Free online registration required.



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packages - including

a partition tool that can resize existing partitions to make room for the OS – and more can be downloaded and installed automatically using the Synaptic packet manager.

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4 | AUSTRALIAN PC WORLD SEPTEMBER 2006

PC WORLD HERE'S HOW FLASH TUTORIALS

A new series of small Flash tutorials from PC World that give you the answers to such questions as how to backup your registry, remove startup services, defragment your hard drive and more.

MAVIS BEACON **TEACHES TYPING**



Let Mavis Beacon teach you how to touch type with this interactive software tutorial. Just follow these easy lessons and you'll be typing with the

best of them in no time at all!

PRFY DFMO

Prey tells the story of Tommy who, when abducted, sets out to save himself, his girlfriend and the planet. This demo contains the first five levels of the single player campaign, and two multiplayer levels.

ADDRE TRIALS

Try out the trial versions of the popular Adobe Photoshop Elements 4 and Premiere

Elements 2 - graphics and video software for

user.





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4.5 Trial → BEST BUY REVIEWS

Graphics Cards, Media Centre PCs, TV Tuner Cards

→ WIRELESS

AirSnare, iPig. NetStumbler

→ SECURITY

FraudEliminator 2.4. Spybot Search and Destroy

1.4. Sygate Personal Firewall 5.6 → AUDIO/VIDEO

Audacity 1.2.4b. Audiographer 1.83, Videora iPod Converter

→ ESSENTIALS OpenOffice 2, PDF Creator, SyncBack 3,2,10

→ GRAPHICS APPLICATIONS

AMP Font Viewer 3.70. IrfanView 3.98. PhotoFiltre 6.2.4

→ I INHIX

Firefox 1.5. Gaim 1.5.0. Thunderbird 1.5

→ INTERNET TOOLS

Buyertools Reminder 1.5. Free Download Manager 2. Windows Live Messenger 8

→ WEB DEVELOPMENT

First Page 2006, Web CEO 5.6, Xenu Link Sleuth

→ WEB BROWSERS Firefox 1.5. Mozilla 1.7.13. Opera 9

→ HELPSCREEN & HERE'S HOW

Cinescore 10 Trial, ClearContext, Google Sketchup → PATCHES & UPDATES

NVIDIA ForceWare 91.31. Ad-Aware Definitions Update, Nero 7.2.3.2b Update

→ DIAGNOSE, RECOVER & REPAIR Drivelmage XML 1.18, Partition Logic 0.61, PC Wizard 2006

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USING THE DVD: The PC World DVD should load automatically. If not, load "index.htm" from the root directory of the DVD. FOR MORE INFORMATION, see the "read-me.txt" file in the root directory (d:/read-me.txt, where d: is your DVD drive). DAMAGED DVDs: PC World is unable to replace cracked cases, but if you have a damaged DVD, e-mail pcworld_cd@idg.com.au. NO DVD PLAYER? E-mail your name, address and month of issue required to pcworld cd@idg.com.au and we'll send you a CD packed full of selected content taken from this month's DVD.

SEPTEMBER 2006 AUSTRALIAN PC WORLD | 5



EDITORIAL

List-mania

Let the debate begin!
This month's PC World
features our list of the
100 best products of
the year. This huge list
ranking our picks for
the most innovative
and essential products
is sure to have heads
nodding and shaking in

equal numbers.

eel free to quibble with the choices in our 100 best products of 2006, starting on page 38. That's part of the fun. We know our readers are just as passionate about technology as we are and we're sure you will have your own opinion or what should (and shouldn't) have made the list.

One thing you'll probably immediately notice is how varied it is. There's PCs, Web services, hand drives, CPUs and countless other types of tech gear. "The products we cover extend far beyond the PC, because technology today means so much more than simply sitting at a desk hammering away at a spreadsher." Alan Stafford, who condinated the list, explains, in

"Traditional computing products are still important, of course, but our winners also reflect the smart technology that can now be found in everything from Web services to consumer electronics."

Of course, building a list of such diverse products has its challenges. Unlike our Best Buys features, where similar products can be benchmarked and rigorously compared, like feature for like, it's a different matter to rank a CPU (our number one, Intel's Core Duo processor platform) against a Web site that lets you share video (www.youtble.com at #7).

Our method was to evaluate each product on a number of measures. Ultimately, however, it really comes down to whether the product answers a need and performs especially well. This is the kind of test criteria you will be familiar with from all our reviews. The added twist to this list, however, was a sorre of each product's impact. Some products are so influential or widely adopted that they cannot be ignored: they really are changing the technology landscape.

Like all dream lists, we also downplayed the issue of price. That's not to say all the selections are for the gold amex crowd only. You'll find just as many free and sub-\$100 products as you will break-the-bank contenders. Many of the most useful products available today are very bugget-friendly. Adobe's Photoshop Elements 4 image editor (#9 on the list), for example, is an elegant and powerful image-editing and organising application that sells for \$1.329 less than the company's pro-feel Photoshoo Call.

We hope you enjoy this list just as much as we enjoyed arguing over the inclusions and rankings. You probably already own or know of some of them but I'm sure you'll see a few surprises.

Deanne MchAosh DEANNE MCINTOSH, FEATURES EDITOR

WINNERS:

The winners of the Subscribe & Win competition in the July issue of PC World are:

- P. Young, NSW;
- K. Tank, SA; T. Parker, NSW:
- A Briggs, NSW;
- P. Beyer, SA;
- R. Dixit, NSW;
- R. Clode, VIC;
- S. Tan, WA; P. Allan, NSW:
- I Siderides NSW:
- J. Siderides, NSW,
- P. Davidson, QLD:
- D. Langsford, NSW;
- P. Munzenberger, QLD:
- R. Brugeaud, ACT;
- Z. Malter, NSW;
- J. Hood, NSW:
- L. Butler, NSW:
- D. Green, TAS;
- J. Spillane, NSW;
- G. Skipper, VIC;
- A. Leonard, NSW; J. Ji. NSW;
- M. Coiro, NSW:
- D. McGregor, VIC:
- K. Gubbins, VIC.

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Centrino Duo

Score one for SuSe

I had the same problem as Paul Mellor in August PC World, page 101. I blew the motherboard then the OEM edition of Windows XP wouldn't accept the product key when a new board was installed.

Then a friend introduced me to SuSe 10.1. What a difference: I now have all the software for free as well as the new GLX graphics. I believed what I was told in the past about Linux only being for seeks. How wrons that was.

SuSe 10.1 loaded and configured with hardly any input from me except for choosing the desktop I wanted (Gnome, for I heard in PC World that it was the most friendly for newbies). I have been using this now for two months and have never looked back.

Part of the install includes Wine that can run, I believe, Windows programs, but who would want to run these when you are given almost any normal user needs in one package.

When I read about the requirements to install the new Vista and the hardware requirements I'm glad I've changed to Linux. The learning curve wasn't as steep as I thought it would be and, in fact, I find it easier than Windows.

So Microsoft you have lost another customer to your second quality products. Instead of my money lining their pockets it's lining mine. CHARLIE STEWART

Affordable DVDs, less piracy

The music and film industries have been posting record profits each and every year. We consistently hear that piracy is hurting these industries and stealing from artists. That is utter nonsense. The RIAA and MPAA are two of the wealthiest corporations in the world.

Most big-label recording artists see as little as 3 per cent share of the profit for their hard work. Three per cent! That means a whopping 97 per cent goes straight into Sony/BMG/Mushroom's pockets. Yet we're told pirates are stealing from artists?

The RIAA and MPAA post record profits every year. Their profits grow at a substantially greater rate than international or US national GDI. Yet Hollywood producers and the MPAA continue to outsource animation to India, Korea and China. And we're told pirates are stealing from the movie business?

Here's how to kill piracy: release movies

at half the price, DRM free. If I saw DVDs appearing on my store shelf at \$15 new, I am utterly positive piracy rates would tumble. You can never kill it off. But you can be sure to put a big dent in it.

Common sense will first the problem. Give it a few years and we'll all be paying \$10.0 for new DVDs, whilst continuing to be told by fat men wearing Gucci suits and being driven around by private chauffeurs in their BMWs that "we really are doing it tougher this year. Honest." (References: www.jdray.com/ Daview/courtey.html; www.aginsttopa.com; http://forms.theregister.co.uk/search/ ?g=fiaa.) imm/ Tram

More Linux, please

I have renewed my subscription to PC World for yet another year. I was very disappointed, however, after receiving the August issue that the Here's How — Linux pages have been omitted.

Please reassure me that this omission is only temporary.

I am not expressing a new sentiment when I say that a mere two pages of information for users of the Linux operating system is hardly adequate. Please consider increasing Linux coverage.

May I point out that a new Ubuntu distro was released at the beginning of June, you might like to include this on the next cover disc. ANDRE MANGAN

Deanne McIntosh, Features Editor, responds: Andre you're in luck. On the cover DVD of this issue is the latest Ubuntu distribution and you'll find the Linux column on page 110.

Paper chase

I've been subscribing to PCW for nigh on eight years now. I've seen it change and evolve over the years but it's always remained an excellent magazine.

I look forward to my monthly escape from the computer screen to lie in the sun or in front of the fire with a glass of red and my mag for an enjoyable afternoon of reading and dozing. PCW is not just an information source for me but also an exercise in relaxation therapy and I particularly enjoyled) the Best Buys section. Like petrol heads who drool over engines at car shows, I would pore for hours over the various computer components, highlighter pen poised as I planned future purchases for more flush times.

MISSIVE OF THE MONTH

Congratulations to Charlie Stewart! You are this month's winner of a year's

subscription to
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12 months of all
the best PC news,
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Can you imagine my horror over the pact few months when settling down to my favourite section, I'm faced with the shocking sentence "for full review see cover bUD"! Get up off the sofa? Return to my darkened pit of an office? Have to print out pages of "stuff" before my highlighter will work? What are out doing to me!

Whilst I'm sure that many sections of towards DVD presentation, might I humbly request you keep your hands (and burners) of the Best Buys section so that those of us who are trying desperately NOT to remain glued to the VDU for every waking hour, who enjoy, if not need to take some of our information in a horizontal position may continue to so do with PCV. TEARY PARKE

Deanne McIntosh, Features Editor, responds: Tracy, we feel your pain but there's just too much PC World to fit in the paper confines of the magazine. We decided last year to revamp the Best Buys section to include more product categories every issue (in the past, Best Buys featured PC and notebook reviews plus a third, new category each month). This month, for example, we have Best Buys charts for PCs, media centre PCs, notebooks, wireless routers, ADSL2 routers, 19in LCD monitors, graphics cards. TV tuners and projectors. Our charts in the magazine still feature the feeds and speeds (essential features, specifications and benchmarks etc.) there's more products to just over!







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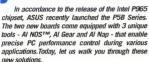
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The PSB series motherboards are based on the Intel PS65, the latest chipsel designed to support a maximum 8GB dual-channel DDR2 800/667/533 architecture and multi-core CPU. The P965 chipset includes Intel Fset Memory Access technology that significantly optimizes the use of available memory bandwidth and reduces the latency of the memory accesses. The PSB Deluve is ready for the next generation Intel Corez processors in LGA775 package. With the new Intel Core microarchitecture technology and 1066/800MHz FSB, the Intel Corez processor is one of the most powerful and energy efficient CPU and shows incredible performance when nathrend with the PSB series motherboards.

To bring out the very best of the P965 chipset and Core2 processor, the ASUS P5B Series is an excellent choice. Attached are the boards' basic specs. We strongly recommend these new ASUS boards.

P5B Deluxe WiFi-AP Edition

- LGA775 socket for Intel Core2 Extreme / Core2 Duo / Pentium
Extreme / Bentium D / Pentium 4 / Celeron D Processors

Intel P965 with Intel Fast Memory Access Technology
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P5B

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non-ECC, un-buffered memory - 1 x PCI-E x16

- Gigabit LAN - 6 x Senal ATA 3.D Gb/s ports including 1 external port



Phisher add VOIP to arsenal

BY GRANT GROSS

new kind of identity theft scam, with thieves using easy-to-obtain VOIP (voice over Internet Protocol) telephone numbers to trick Internet or telephone users, is beginning to pop up, said a cybersecurity vendor.

Related to phishing scams, the new scheme uses cheaply obtained VOIP numbers as bogus credit card or financial services telephone numbers, said Paul Henry, vice president of strategic accounts for Secure Computing. The company has observed only two such scams so far, but it expects the practice to "explode", Henry said.

With Internet users being warned about clicking on hyperlinks in unsolicited e-mail, the new scam includes a phone number instead, Henry said. "It's a natural elevation

Don't get paught

To avoid vishing scams, Secure Computing offered this advice:

- Credit card companies normally refer to customers by their full names in any communication. If an e-mail or phone call does not refer to your full name, it may be a scam.
- You should not call a telephone number provided in a phone call or an e-mail regarding possible security issues with any credit card or bank account. You should call the phone number on the back of your credit card or on your bank
- statement to report security concerns.

 If anyone purporting to be a credit card
 provider calls and requests your card
 number, hang up and call the phone
 number on the back of the credit card and
 report the attempt. If the call was
 legitimate, the credit card provider will
 have knowledge of it.

of the art to move it to the telephone," he said. "People are getting nervous about clicking on links."

New twist on fraud

In phishing scams, identity thieves send e-mail that looks like it comes from a bank, credit card company or online payment service such as PayPal. The e-mail typically says the recipient's account has been compromised in some way, and it contains a link to an official-looking Web site where the recipient can enter account information.

In the new scam, which Secure Computing calls "vishing", identity thieves ask potential victims to call a phone

number attached to a VOIP account, which is easily obtained online through services such as Skype or through retailers reselling VOIP products, Henry said

In one vishing case, scammers targeted Paypal users by including a telephone number in a spam e-mail. In the other case, the criminals configured an automatic telephone dialler to dial phone numbers, and when the phone was answered, played an automated recording saying their credit card has had fraudulent activity.

The recording asked the telephone customer to call a number with a spoofed caller ID related to the credit card issuer, Secure Computing said.



Hold the phone: phishers are using VOIP in a bid to scam victims into calling with personal information.

Once users call, they are asked for personal account information.

VOIP numbers are easy to obtain a anonymously, but Henry didn't fault VOIP providers for vishing scams. A larger problem is the ease of obtaining credit online or over the telephone, he said

Consumers are comfortable with obtaining credit online or by dialling automated telephone services to get credit, but if credit-granting businesses required physical contact, phishing and vishing scams would be almost eliminated, he added.

"In today's environment, it's absurd," Henry said.



Google helps dig up malware

little-known capability in Google's search engine has helped security vendor Websense uncover thousands of malicious Web sites as well as several legitimate sites that have been hacked, the company said.

Websense researchers Googled for strings that were used in known malware like the Bagel and Mytob worms and have uncovered about 2000 malicious Web sites over the past month, according to Dan Hubbard, senior director of security and research with Websense.

Though Google is widely used to search the Internet for Web pages and office documents, the search engine can also peek through the binary information stored in the normally unreadable executable (.exe) files that are run by Windows computers.

Hubbard and his team plan to share its Google code with a select group of security researchers, but it will not make the software public, for fear that the tool could be misused by the bad guys.



Security researchers have used Google to find thousands of malicious Web sites.

Hardware on the way for Vista

icrosoft's hardware division is developing a slim wireless keyboard that will make it easier for users to access Windows Live services and features in its Windows Vista OS.

A Windows Live Call button will provide one-touch access to a list of Windows Live Messenger buddies online to initiate a videoconference or chat session. Pressing the button will automatically log a user into Windows Live Messenger and open a list of contacts currently online.



Keys on a new keyboard designed for Windows Vista will light up if the room is dark, according to insiders.

A Gadgets button will provide similar access to Gadgets in Windows Vista, mini-applications that appear on the computer screen to display things such as news, sports and weather information.

Ultimate Keyboard's keys will be backlit, and their illumination will be adjusted based on surrounding light and proximity of users, the source said. The keys will light up if the room is dark or if a user is close by.

A dock will be included with the desktop package to charge the keyboard and mouse simultaneously from a computer's USB (Universal Serial Bus) port. The keyboard and mouse will come with built-in batteries. The cordless keyboard and mouse will communicate wirelessly with a computer within a 30-foot range using Bluetooth technology. **addiscipled.**

INTEL'S CORE 2 DUO BLAZES AHEAD

With this chip line, which was released on 27 July 2006, Intel decisively reclaims the power desktop crown from competitor AMO. We showed you some preliminary results last month (page 19) using a sample CPU, but this month we bring you official scores and comparisons using CPUs that are ready to ship.

In our PC WorldBench 5 test suite, Intel's Core 2 Duo reference system outscored a matching system equipped with AMO's high-end Athlon 64 FX-62 chip by 17 per cent.

The Core 2 Duo configuration we used performed impressively, machines equipped with it should allow power users to handle demanding multimedia work more quickly and to perform multiple computing tasks at once more efficiently. Games, too, will receive an impressive boost from systems equipped with the new chips.

The Core 2 Duo line

The Core 2 Duo processor line ranges from the 1.866Hz E6300 chip (\$320) with ZMB of cache to the 2.93GHz Core 2 Extreme X6800 chip (\$1550) with 4MB of cache; all have a 1066MHz system

bus. (Intel leaves the "Duo" designation off of its X6800 CPU.)

Though Core 2 Ouo chips use the

Intel's Core 2 chips will only work on motherboards that have a G965, P965, Q965 or 975X Express chipset. same Sockel 775 interface as current Pentium 4 and Pentium D chips, they require new chipsets, so you'll have to get a new motherboard — you can't just pop a Gore 2 you chip into your existing Intel-based PC and reap the tremendous performance gains. The Core 2 Dour reference systems we tested used a motherboard with Intel's 975X Express chip

> set (boards using the 965 Express chip set will also be available); NVIOIA and ATI have their own Core 2 Duo boards as well.

Power to spare
Our motherboard Core 2 Duo test
setup consisted of an Intel 975X
Express board, 2GB of OOR2-667
memory, a pair of SATA hard drives

12 AUSTRALIAN PC WORLD

Lenovo recommends Windows® XP Professional.



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Starting at less than 1.3 kgs!, it's the smallest, lightest ThinkPad ever. Because you already have enough weight on your shoulders. The new Lenovo" ThinkPad X60 and X60s notebooks with Intel Centrino Duo Mobile Technology. New ThinkPad.*

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Rumours fly of Microsoft iPod rival

icrosoft is reportedly readying an iPod killer set to hit retail shelves in time for the end-of-year Christmas shopping season.

Microsoft's portable music and video player is rumoured to include wireless connectivity, enabling users to download songs without being tethered to a PC, according to a report from The New York Times.

Microsoft faces an uphill battle in its efforts to take on Apple, which shipped 8.5 million iPods in the second quarter of 2006 alone, marking a 61 per cent increase from its sales for the same quarter in 2005.

Microsoft has already introduced initiatives to compete with Apple's Times music service. In May, it bunched along with MTV Networks the Urge music store as part of the Windows Media Player 11 public beta. The Urge store allows American users to purchase songs for \$US.0.99 and albums for \$US.99.9, as well as a monthly subscription of \$VIS.15.00. The service is not compatible with Apple Macs or iPGAP.



Rumours suggest Microsoft is working on an iPod alternative for launch in time for Christmas.

MRAM memory chips arrive

cAfee has purchased Web-site rating company SiteAdvisor. Founded by a group of Massachusetts Institute of Technology engineers in April 2005, SiteAdvisor develops automated software that tests Web sites to see whether they install nasty things like spyware or computer viruses. In March the company released a free browser toolbar designed to warn users

when they visited Web sites that seemed risky.

SiteAdvisor's toolbar is able to superimpose Web-site ratings on top of search results from sites such as Google and Yahoo, and that technology appears to have been a motivating factor in the acquisition.

McAfee hopes to extend the SiteAdvisor technology to create a new line of "safe search" products, the first of which is expected in 2006, said Bill Kerrigan, executive vice president of McAfee's consumer group.

Though SiteAdvisor's database of 2.7 million Web pages may also play into future enterprise offerings, McAfee's initial focus will probably be on developing a stand-alone consumer product. Kerigan said.

But one thing does appear to have been decided: McAfee will continue to offer the SiteAdvisor toolbar, free of charge, he said.



MRAM's first commercial product, at 4Mb of storage, falls short of expectations.

configured in a striped array, and an NVIOIA DeForce 7800F-based graphics card. We swapped first a 2.936Hz Core 2 Extreme X6800 chip and then a 2.676Hz Core 2 EXTOO child to that setup to generate soores we could compare directly to an otherwise identically configured system featuring AMP is new ORZ-capable AMP platform and its top-of-the-line FX-82 processor.

Both of the Intel setups bested the AMD-based system on every test in our

PRODUCTIVITY TESTS

PC WorldBench S suite (see chart below). The improvement on PC WorldBench S? multitasking tests, which involve running a Web browsing session in Mozilla while enceding a file with Windows Media Encoder, was particularly dramatic. You'll also see notable gains in Photeshop and similar graphics apolications.

The Core 2 Extreme X6800 reference system logged a score of 160 on PC WorldBench 5, 17 per cent higher than the 137 turned in by the corresponding system using AMD's 51800 Athlon 64 FK-62. And the PC using the less expensive E6700 chip managed a score of 153 on PC WorldBench — still 12 per cent better than the FX-62 PC's mark.

Architectural improvements
Intel has put a lot of effort into
reducing power consumption in the Core
microarchitecture.

Its previous generation of Pentium

TESTEO SYSTEM	CPU	PC WORLOBENCH 5 (OVERALL)	MULTITASKING (SECONOS)	AGOBE PREMIERE 6.5 (SECONOS)	AGOBE PHOTOSHOP 7.0.1 (SECONOS)	AHEAD NERO EXPRESS 6 (SECONOS)
Intel Core 2 Extreme PC	2.93GHz Core 2 Extreme X6800	160	279	273	222	181
Intel Core 2 Ouo PC	2.67GHz Core 2 E6700	153	296	283	235	185
AMB Socket AM2 FX-62 PC	2.8GHz Athlon 64 FX-62	137	362	308	274	187
Intel Pentium 0 940 PC	3.2GHz Pentium D 940	113	500	434	351	199
Intel Pentium 0 940 PC	3.2GHz Pentium D 940	112				

Chart notes: Tested systems were configured with 2GB of 00R2-667 memory, a pair of SATA hard drives in a striped array, and an NVIOIA Geforce 78000T-based gray ics card. The systems ran Windows XP Professional and had 2GB of RAM unless otherwise noted. Higher is better for the overall PC WorldBench 5 score. Elsewhere, lower is batter.

14 AUSTRALIAN PC WORLD SEPTEMBER 2006







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Precision gaming

he makings of a good mouse for games hang somewhere between functionality and simplicity. We tested the A4Tech X-750BF and were quite happy with the results.

The mouse-wheel was smooth but also had good resistance. It was lightweight and had a wide, ergonomic palm rest that fitted picely into your hand. Forward and back buttons above the thumb rest are programmable for windows navigation or ingame actions. There's also a thin "3xFire" button that runs parallel to the mouse-wheel.

A4TECH X-750BF GAMING MOUSE

PRICE \$60 DISTRIBUTOR Protac PHONE (02) 8748 8888 URL www.profac.com.au OVERALL This button clicks three times in rapid succession for a quick burst of fire in-game, or for opening deskton icons with a single click. Behind the mouse-wheel is the

dpi (dots per inch) switch. This button allows you to change the resolution six times from 600dpi up to 2500dpi at any time for precision or ultrasensitive speed. As the resolution changes, the mouse-wheel glows different colours as a visual reference. This mouse performed well in games with both high speed and high precision situations as well as being comfortable to use over time

Good sound, not silent

Itec Lansing's AHP812 noise-cancelling headphones reduce external interferences, but don't quite create the silent audio environment that you might be expecting. The speakers produce clear high-tones and ALTEC LANSING AHP812 NOISEexcellent bass, which can be heard and felt even at low volumes. The cable not only **CANCELLING HEADPHONES** had an in-line remote with volume control and a mute button, but was detachable from the PRICE

headset to make way for a potential wireless set-up.

One AAA battery is required for the best quality sound, which is claimed will last up to 48 hours, though the speakers will continue

PHONE (03) 9816 8000 URI www.audion-mm.com OVERALL to play after the battery has died. Large

\$250

VENDOR Audion

leatherette cushions help keep you comfortable over extended periods of listening. and the taut, padded head-band with angled speakers creates a firm seal, which does well at minimising noise. The inclusion of an airline audio adapter as well as a 6.3mm jack is nice, as is the hard cell case and carry strap. Despite the digital noise-cancellation

not being as effective as we'd like, these headphones produced a very nice sound.

Extreme Edition chips drew up to 135 watts of power. The Core 2 Extreme X6800 draws only 75 watts, according to Intel's thermal design specification; and the more mainstream Core 2 Duo parts bump that number down to 65 watts. As a result, there should be headroom for performance PC makers and enthusiasts to overclock systems based on a Core 2 CPU. Moreover, the design should enable system vendors to build high-performance PCs in smaller, quieter cases.

Intel developed its Core microarchitecture from the ground up. focusing on multiple CPU cores, high performance and low power consumption - there's a lot of technology packed onto its 65nm die (pictured). Using lessons learned in building its successful Pentium M mobile CPUs, Intel first improved its mobile line and released the Core Duo CPUs. Then the company set out to strengthen the performance of its desktop chips, while dramatically reducing their power consumption. For example, when your PC is sitting idle or running just a few simple applications, the Core 2 Duo can clock down or shut off parts of its logic to conserve nower

Most of Core 2 Duo's performance advantage over its Pentium predecessors comes from an additional execution unit on each CPU core. (Core 2 Due chips have four such units per CPU core versus the Pentium D's three per core.) The additional unit per core, plus some clever coding that lets the chip fuse common groups



The 65nm die of the Core microarchitecture is smaller than its Pentium predecessors, but packs a heck of a lot of technology.

of instructions into single instructions allows Core 2 Duo chips to outperform Pentium D chins that run at higher clock speeds.

A staggering 4MB of L2 cache keens the higher-end Core 2 Duo chins sunnlied with the data they need in order to run at full speed, and Intel has carefully tuned their prefetching algorithms. which preemptively cache

the appropriate data before the CPU needs it. While most dual-core chips, including AMD's Athlon 64 line and Intel's Pentium D CPUs, dedicate a certain amount of cache to each CPU core, the Core 2 Duo provides shared access to its entire 4MB of cache. And the chip can distribute that cache

Wehcam in motion

f you're an animated person then people receiving your webcam images are likely to see you blur in and out of the screen. Creative's Live Motion webcam frees you up with a screenmounted camera that can pan and tilt. Using the "WebCam Center" software you can

choose to either fix the camera in any position on its axis (200 degrees horizontal/105 degrees vertical) or have it automatically track your face as you move. The software also has a timelarge style feature and you can catch people spooning around your desk with a motion detection function. All recordings can be automatically uploaded to an ftp site where they can be remotely accessed.

CREATIVE LABS LIVE MOTION WEBCAM

PRICE \$159 VENDOR Altech Computers PHONE (02) 8831 9999

IIDI

www.altech.com.au OVERALL

The mechanical noise of the motor can be a little irritating. If you move too suddenly the camera tends to lose you and searches a corner of the room until you manually pan it with the on-screen controls. The 640x480 image is reasonable and exposure adjustments can be automated or set manually. It's a fun toy, but needs some work, as it can be as frustrating as it is useful.

MOTOMOUTH

ike the Jahra RT620S (August n30). Motorola's S805 can pair up with two A2DP/AVRCP-compliant Bluetooth devices like mobile phones or stereo adapters, letting you switch from your music to a phone call and

The headphones are well-padded and comfortable for extended use. producing high-quality audio in AVRCP mode, with bright treble and resonant bass. The closed earpieces cut out a lot of ambient noise and device controls are conveniently located on each ear; phone/volume on the

MOTOROLA S805 BLUETOOTH

HEADPHONES PRICE \$249

OISTRIBUTOR Motorola

PHONE 1300 788 955 www.motorofa.com.au

IIRI OVERALL

......

left, playback/next/previous on the right. Phone conversations using A2DP weren't quite as impressive, however, with occasional lag and echo in our test calls (though never enough to make conversation difficult).

The headphones can run from a regular wired connection (2.5mm jack), and the internal batteries are good for over 15 hours of audio playback. Unlike the BT620S, the S805 had no problem reconnecting to the AVRCP stream (from a PC with Motorola's PC850 USB adapter), making this a much more effective solution.

between its cores as needed. If one core is churning away at a particularly complex task. it can use most of the L2 cache, while the other core runs a simple task that demands less cache memory.

AMD's response

Intel has produced a winner with its Core Duo 2 design; and for the first time in years, the company holds a clear performance advantage over its long-time rival, AMD, But while the short-term performance picture may look bleak for AMD, don't count the company

AMD plans to introduce aggressive price cuts this month (they may already be in effect as you read this); and later this year, it will launch 4x4, an enthusiast platform that enables systems to use a pair of highend dual-core chips. Though applications

and games capable of taking full advantage of multiple CPU cores are rare as yet (AMD claims Cakewalk, Havok, NERO and Sony are among the software developers that have embraced the 4x4 platform), we expect the performance - and price - of 4x4 systems to be quite high

Looking further into the future, AMD will open up its HyperTransport bus, allowing other companies to design specialised coprocessors and accelerators, and drop them onto the same super-fast hus that AMD uses to shuttle data between the CPU, RAM, and other key components in a system. Such coprocessors could be built into a CPU package for multisocket systems or designed as add-in boards for a new slot type dubbed HTX.

This initiative, which AMD is calling Torrenza, will debut on the server side, where multi-socket systems are already common

and where specialised processors could accelerate Java code or database operations. Desktop and gaming applications are further away: but if demand is high enough, Torrenzabased physics or graphics coprocessors could appear in the next few years.

Ultimately, however, while 4x4 and Torrenza are interesting technologies, neither is likely to have a large mainstream impact. AMD's true answer to Core 2 Duo will arrive in 2007, when it is scheduled to launch its nextgeneration CPII architecture, dubbed "K81". K8L and single-chip quad-core processors will be compatible with 4x4 motherboards, according to AMD.

In the meantime, no matter what their budget, demanding PC users have a highperformance option in the Core 2 Duo line. which should keep their processor-intensive applications humming along. ERIC OAHL



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FIRST**LOOKS**

INSIDE

19 Sony Vaio AR18GP

20 Google Mini: HP Compag tc4400

22 Windows Vista Public Beta

24 Altech Commander: PacStar AMD Gaming No.1 26 Asus PSW DH Deluxe

28 Ben0 CP220 30 Fujitsu LifeBook Q2010: Acer TravelMate 3010

31 Kaspersky Internet Security 6.0

32 Ricoh Caplio R4: Kodak EasyShare V610

33 Sony Cinescore 1.0 34 Serif Draw Plus 8 0

36 AverMedia AverTV DVB-T Volar: Samsung YP-Z5

REVIEW RATINGS

Quick summaries let vou take in each review at a glance. They give a snapshot of the product, how well it performed in testing, plus specifications and system requirements. The product's rating is measured by coloured bars. The more bars out of 10, the better the product performed. Note: beta versions of software and preproduction hardware will not be rated.

PATINGS



Out of the Blu-ray SONY VAID AR18GP

The powerful and attractive new Sony Vaio AR18GP is the first notebook to include a Blu-ray high-definition optical drive

Blu-Ray discs come in both 25GB and 50GB capacities; so as a backup medium even the data volume on larger hard drives can be stored on a small number of disks. It's also perfect for storing hard disk-consuming data such as video. The downside to this is the cost: Blu-Ray discs have a price tag of roughly \$35, but presumably, prices will drop given time.

Of course, what many people will purchase this \$5499 machine for is the ability to watch Blu-Ray content. and as with HD-DVDs, we can assure you that it has been worth the wait. High-definition content played from the Blu-ray disks on the Vaio looks absolutely stunning.

A Sony demo Blu-ray disc looked every bit as good as the HD-DVD content we recently looked at on a Toshiba notebook, and the improvements over standard definition DVDs were clear. We tested on both the notebook LCD and a high definition. flat panel television, they both looked fantastic. Edges were clean and sharp. with no noticeable aliasing even in areas of extreme complexity. Tiny characters in the background, which look blocky on DVDs, were sharp and clear, and we could make out impressive details in foliage and mountains.

However, it will be months before any Blu-ray media hits the stores, and at least a year before there are an adequate number of titles available, so those expecting to find all their favourite films in high-definition glory will be disappointed. This is a device for those

who want the latest and greatest and want it now Even ignoring Blu-Ray, the AR18GP

is a solid notebook. It performed well in our tests, with a respectable 91 in World Bench 5. This was in line with what we expected from the hardware combination that includes an Intel Core Duo T2600 processor running at 2.16GHz, 1GB of DDR2 RAM and an NVIDIA GeForce Go 7600GT graphics card with 256MB memory

Our 3DMark testing indicated the system is perfect as an upper midrange gaming machine, thanks largely to the impressive video processor. with scores of 21,626 and 2850 in 3DMark01 and 06. respectively.

Sony rates the unit running on the supplied Lithium Ion batteries for two hours, a figure that matched the 120 minute result in the MobileMark 2005 productivity test. Under the more power sapping MobileMark 2005 DVD test, battery life was rated at 82 minutes

Of course, the gigantic screen also means this is a particularly large notebook. Measuring 300x400x45mm and weighing 3.6kg, it is definitely at the larger end of the scale. When size is combined with battery life, we think this notehook serves well as an all-nurnose portable PC, rather than a device suited to constant mobile use. VERDICT The Sony Vaio AR18GP

combines high definition playback with a wonderful aesthetic, powerful components and a 17in widescreen display to create a very attractive allpurpose package for the early adopter. ANDREW KLIEM AND BEN GERHOLT



SONY VAIO AR18GP

PRICE \$5499 VENDOR

URL www.sonystyle.com.au

SYSTEM REQUIREMENTS

Intel Core Duo Processor T2600 - 1GB DDR memory; NVIDIA GeForce Go 7600GT graphics adapter: 2 x 80GB hard drives RAID 0: 17in LCD (1920x1200); BD-RE optical drive; Memory Stick, SD Card, MMC Card readers; 3 x USB 2.0. SPDIF Input. S-Video Output. HDMI Output, HDMI Input, 1 x FireWire, D-Sub: Universal ExpressCard slot: 0.3Mp VGA CMOS camera; Bluetooth 2.0, Wireless 802.11a/b/g, 100Mbps Ethernet (100 Base-TX/10 Base-T) and 56Kbps analogue modem; 1 year warranty; 3.6kg.

FEATURES VALUE OVERALL



HP's robust tablet not cheap

HP COMPAG TC4400 TARIFT

convertible tablet PC with a thoughtful design and long battery / life, the HP Compan tc4400 should please tablet users in the market for a robust system. However, its steep price may deter some people.

Using the included stylus in tablet mode to make handwritten notes on the 12 1in screen was easy and thanks to conveniently placed buttons on the right side, switching the screen to tabloid view was a cinch

To further assist tablet lovers, HP has situated the fingerprint reader on the top of the screen when it's in tablet mode. And a dedicated key for the Ctrl+Alt+Del function helps users make a quick restart without having to switch to notehook mode.

As a notebook, the tc4400 works well. Its keyboard was easy to type on. and the system comes with plenty of ports, including two for USB 2.0 and one for S-Video.

In our performance tests, the tc4400 turned in good results. It aced the battery-life test, running almost six hours. With its 1.8GHz Core Duo T2400 processor and 1GB of RAM, the tc4400 mustered a score of only 84 in our WorldBench 5 test suite, which is on par performance compared with similar systems.

Weighing 2.2kg (without PSU), the tc4400 is a bit bulky for a tablet. It also lacks a built-in ontical drive, which is an extra \$375 for a DVD-RW, Add that cost to the base price of \$3899 and it's a fairly expensive purchase.

Still, for a well-designed notebook with seamless tablet functionality, some users may find that cost accentable VERDION This unit doesn't come cheap and for the price you might expect better performance. However, its battery life was excellent and it's a well designed machine with good functionallity. KALPANA ETTENSON



\$3899

Hewlett-Packard

www.hn.com.au SYSTEM REQUIREMENTS

Windows XP Tablet PC Edition: Intel Core Duo Processor T2400: Intel 950GM Express chinset: 12.1in (1024 x 768) wide-viewing angle: 80GB (5400rpm): 1GB (1 x 1GB) DDR2 SDRAM (533MHz); 56K v.92 modem, Gigabit Ethernet, Wireless 802.11a/b/g, integrated Bluetooth 2.0, 3 x USB 2.0, Media card reader (MMC SD) S-Video and VGA out: 3-years on-eite warranty

7

FEATURES		٠				
VALUE		٠				
OVERALL	22					

Google Mini is mighty

GOOGLE MINI

oogle brings all the searching power of its Web based search engine to your office network with the Google Mini.

We tested the latest version of the Mini on our network at PC World and found its indexing speedy and its searches nearly instantaneous. It was just what you would expect from a Google search tool, it was spot-on in most cases.

Direct help from Google was necessary to get the Mini to index both our Web site and an internal file server. It employs an unusual format for referring to network servers that had even our LT, experts scratching

their heads. Eventually we had to call Google's tech support, which is included in the price for one year

Once installed, access is through a series of administrative pages using your Web browser. You tell it what parts of your network or Web site you want it to crawl, and you can specify what paths you don't want it to follow. This \$4965 version of the Mini will index 50,000 files: a \$74,486 version will index 500,000 files and other versions will search different variations between these extremes. You can also include a search box on your Web site for visitors to use when searching your site.

The default layout of the search page looks exactly like a Google search page, which you can customise. While you can narrow your search to a

specific file type - the Mini will index 220 different file types - it doesn't tackle even common e-mail formats.

The Google Mini can be a hassle to set up, but if you know a bit about networking, it will let you do much more sophisticated searching.

VERDICII The mini is a slim, server-size appliance that brings the speed and relevance of Google's search engine to your company's network. EDWARD N. ALBRO

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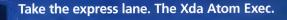
SYSTEM REQUIREMENTS

50,000 file index; Web interface for configuration; 1U rack mountable; desk mountable: Ethernet: scheduled or automatic document crawling using HTTP and HTTPS.

FEATURES	 7
VALUE	 8
OVERALI	 7



O₂





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Load with care

WINDOWS VISTA PUBLIC BETA

with the public release of its second beta version, Windows Vista is beginning to fulfill Microsoft's promise of a handsome and secure operating system filled with forward-looking features for work and leisure. But our experience with new build suggests that Microsoft needs to address some usability issues — and that we'll have to wait for a new generation of Vistar-ready peripherals — before the OS becomes truly powerful and user-friend and

Initially released in May along with Reta 2 of 2007 Office, Vista Beta 2 fine-tunes features from earlier versions of the new OS, including numerous security measures; sophisticated search tools; support for mobile workers (who can now set up and collaborate on an ad-hoc wireless network); and, for IT pros. tools for easy OS deployment and PC management. Microsoft says Vista will be ready for corporate customers this November, but consumers will have to wait until early next year to buy PCs with Vista preinstalled (or to upgrade existing machines with shipping code). In June, the company made the beta available for limited public download (visit www.microsoft.com/windowsvista/ getready/preview.mspx for instructions).

Microsoft has finally provided specific hardware requirements for Vista's flashy Aero graphics system, which offers translucent window frames; thumbnail previews of minimised windows that pop up when you pass the pointer over their taskbar button; and the ability to switch between apps displayed as a threedimensional parade of flip-through windows (a feature called Flip 3-D). To get the Aero look, you will need some fairly hefty hardware (see "Future PC Vista Ready?" below) plus a business or high-end consumer edition of the OS (Vista Enterprise. Business, Home Premium or Ultimate). The lower-end Vista Basic will run either a simplified interface (called Basic) that looks more or less like

Windows XP or — if your PC has the necessary hardware to support Aero — a Standard interface with some of Aero's features (such as the glass window frames) but not others (Filip 3-D and thumbnail previews). Windows Vista Starter, a version intended for thirdworld countries, will offer only the Basic interface.

Among the operating system's promising features are SuperFetch, performance-enhancing memory caching that draws on your usage patterns; ReadyBoost, which uses a USB flash memory drive to supplement system RAM; SideShow, which enables you to access the PC's data on such auxiliary displays as a small screen on your notebook's exterior, and Windows Rally, a family of technologies for setting up and using intelligent devices on



Do the Windows shuffle: the Flip 3-D feature in Vista's Aero graphics lets you sort through open all application windows.

networks. The new OS also introduces the XPS (XML Paper Specification) file format, similar to Adobe's ubiquitous — and far more capable — PDF.

Rally and SideShow won't come into their own until Vista-aware devices debut. But what's most annoying about Beta 2 are the frequent security-related pop-ups (most prevalent right after you upgrade) seeking administrator passwords for tasks as routine as saving documents to previously accessible folders. Clearly, lax security in Windows XP and Internet Explorer 6 has been a big problem, but Beta 2's approach seems like too much of a swing in the onnosite direction.

I'm also on the fence about Aero: the glass windows are cool, but they don't appear on all apps (which makes for a hodgepodge look), and they drain system resources.

TERDICI By all means, try the beta
but only if you're willing to brave the
security prompts, and even then only on
a non-mission-critical PC. Three weeks
after upgrading, I'm still unable to run
Photoshop Elements 4 or Rhapsody.

VARPHA 1828.

Future PC Vista ready?

If you want to know whether the PC you're thinking of buying can handle Microsoft's upcoming Vista operating system, you'll first have to figure out the company's Byzantle logo-program structure (see www.microsoft.com/windowsvista/gettrady/default.mspc). Microsoft has two different levels of Vista-readiness, each carrying its own logo: Windows Vista Capable and Windows Vista Foreium Ready.

Windows Vista Capable PCs need an 800MHz (or faster) CPU, 512MB of RAM, a DirectX 9 capable graphics processor, and 15GB of free hard-drive space just to run the OS and its "core" features.

Windows Vista Premium Ready machines will display the new interface and require a 16Hz CPU, 18B RAM, a DirectX 9 capable GPU that supports WDDM (Windows Display Driver Module), in-hardware Pisus Ishader 2.0 and 32 bits per pixel.

WINDOWS VISTA PUBLIC BETA

PRICE Free

VENDDR Microsoft

URL www.microsoft.com

RETA VERSION NOT RATED

SEPTEMBER 20





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Four-drive RAID

ALTECH GAMEEORCE COMMANDER

pon first glance you may scoff at this machine's appearance. - its case looks awful - hut heauty does lurk beneath the surface in the form of a powerful and well-put-together configuration for gaming and multimedia pursuits.

The machine scored 122 in PC WorldBench 5, thanks to its Athlon 64 X2 3800+ CPU and 2GB of DDR400 RAM. and it screeched to a score of 5558 in 3DMark2006, thanks to its dual GeForce 7600GT-based graphics cards. Quake 4 with 4x antialiasing (AA) scored 77 frames per second (fps), while FEAR scored 43fps without AA and 25fps with AA.

More impressive was the machine's hard drive performance, which recorded 45MBps in our file transfer tests. This result is very fast and is a direct result of the RAID O configuration that Altech has implemented, which consists of four 80GB Samsung drives. These are attached to the Foxconn 939SLI32eSATA2's Serial ATA (SATA) ports, which are controlled by NVIDIA's NVRAID utility. All four SATA ports are taken up. on the board, but if you want to add more drives, you can do so via the two external SATA norts (eSATA), which are located on the rear port cluster of the motherboard.

Other connectivity options include FireWire and USB 2.0 ports, which are also located on the front of the case. Unfortunately, the ports are recessed deeply on the front panel and can be hard to use.

Cooling for the CPU is by way of a large heat sink with heat pipes and a fan, while a front-mounted 8cm fan keeps the hard drives cool and a 12cm fan extracts warm air from the case.

Rounding out the package is a 19in Samsung LCD monitor, basic Microsoft input peripherals and a set of Creative SBS580 speakers

VERDICT It doesn't use the latest AM2 socket, but its performance is impressive. ELIAS PLASTIRAS



ALTECH GAMEFORCE COMMANDER

DDICE 62800 VENDOR Altech

PHONE /02/ 8831 0000 IIRI www.altech.com.au

CHRITATIONS

AMD Athlon X2 3800 + CPU: Socket 939 ULi M1695 chipset: 2GB DDR400 RAM: 2 x GeForce 7600GT graphics cards: SLI: 4 x 80GB Seagate SATA II hard drives: RAID 0: Samsung SH-W162Z DVD burner: 19in Samsung 940N LCD monitor; 8 x USB 2.0; 1 x FireWire; 2 x eSATA: Gigabit Ethernet: 6 x 3 5in and 4 x 5 25in drive bays: Creative SBS580 speakers:

Microsoft Basic keyboard and mouse FEATURES VALUE

Packs a lot of power

PACSTAR AMD GAMING NO.1

t first the Pacstar AMD Gaming No.1 looks plain, but it has a lot \of grunt and you don't have to pay through the nose for it.

This machine packs an AMD 4200+ dual core and also comes with a GeForce 7900GT for boosted performance. It includes 1GB of Corsair DDR400 RAM (2x 512MB dual channel), which is verging on the minimum requirements of the latest games, However, during

our testing we didn't notice any loss in performance, but if it does become an issue it can be upgraded to 4GB.

It got an impressive score of 110 in our WorldBench 5 tests and aced FEAR's in-game benchmark, averaging 60fps in 1280x960 at full detail, including 4x antialiasing and 16x anisotropic filtering. Two 300GB hard drives are set-up in a RAID-0 array for speed and the machine copied a 4.12GB set of raw data at 25.6MB/s, which is a good result.

The case is sturdy, modest in size and isn't overly noisy. Cable management was neat but could have been better handled, although a dedicated shroud keeps the CPU away from any clutter and ensures it gets a constant supply of cool air. One large fan at the rear extracts air from the case. While the HDD's are situated near a grill at the front of the case, they are not in the path of any direct airflow. On the other hand, due to this location the bays are easily

accessible for future upgrades. VERDICE This machine should handle all the latest games with ease and won't burn a hole in your wallet. JESSE SUTTON

PACSTAR AMD GAMING NO.1

VENDOR Pacstar Computers

PHONE (02) 9868 6962 IIRI www.pacstarcomputer.com.au

SPECIFICATIONS

AMD 64 Dual Core 4200+ CPU (Socket 939). nForce 4 Sti chipset, GeForce 7900GT (256MB), 1GB DDR400 (2 x 512MB) Corsair RAM. 19in widescreen ChiMei CMV 938D monitor (1440x900), 2 x 300MB Seagate SATA II 7200rpm HDD, LG GSA-H10ABB SuperMulti DVD-RW (dual-layer), 6 x USB 2.0, 1 x FireWire, 3 x 5.25in and 4 x 3.5in drive bays. Gigabit Ethernet, VGA+DVI output, SPDII in/out, 8CH audio, 2 x speakers, Windows XP Home

FEATURES VALUE OVERALL



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Core 2 Duo mobo

ASUS P5W DH DELUXE

ased on the Intel 975X chipset, the ASUS P5W DH Deluxe is the company's first motherboard to support the latest Core 2 Duo processors. Its LGA775 CPU socket can also support Pentium 4 and Pentium D processors.

The hoard has a large array of connectivity options, including builtin 802.11b/g Wi-Fi, dual Gigabit Ethernet ports and eSATA, but it isn't as heavily stocked with internal SATA ports compared to previous high-end motherhoards we have seen (which have eight ports). Seven ports are available on the hoard and these are widely spread. One is located inconveniently between the Wi-Fi module and the heat nine that cools the chinset.

Multiple RAID options using different controller chips (and jumper settings) make this board quite fiddly. You can create RAID arrays using the built-in RAID capabilities of the Intel ICH7 controller (three ports), or the Silicon Image 4723 controller (two norts) or the JMicro controller (one port). The JMicro controller is the most interesting of the RAID options as it allows you to use the eSATA port as part of your RAID array. The eSATA port cannot be used as a hot-pluggable port if it is used as part of a RAID array.

For our tests, we used a 75GB Western Digital Raptor hard drive connected to the Intel ICH7 controller. We also used 1GB of Corsair DDR2 800MHz memory, an ATI Radeon X1900XTX graphics card and a Core 2 Duo CPU running at 2,4GHz. Its score of 126 in PC WorldBench 5 is up there with a similarly configured Athlon FX-62 reference machine.

We didn't experience any stability issues with the motherboard during testing. Its driver installation was a breeze: the convenient installer program installed multiple drivers in a single go and only required minimal user intervention. Swapping out a Core 2 Duo CPU and replacing it with a Pentium 4 CPU posed no problems for the hoard.

ASUS is targeting home users who want a board for a media centre PC.



Along with Wi-Fi, it's also supplied with an infrared module and remote control, which can be used to manipulate the power state, fan settings, and media applications of your system.

Physically, the board has some layout problems. Apart from the aforementioned SATA ports, its two IDF norts are inconveniently located. We do like the extension plug that is provided for the front panel button and LED connections on your case. Instead of having to fiddle with individual connections on the motherboard while it's mounted, you can connect your case wires to the extension plug first and then plug that on the motherboard in one go.

For high end graphics performance, the board supports ATI's CrossFire technology via two PCI Express x16 slots. VERDICT This board has some nice innovations and comes with plenty of purpose-built applications, but it also has some complexities. It performed well in our tests and was easy to install. It has ample connectivity options and supports the latest Intel CPUs, but it does cost a lot. ELIAS PLASTIRAS

ASUS P5W DH DELUXE PRICE \$449

VENOOR ASUS

URL www.asus.com.au

SYSTEM REQUIREMENTS

Intel 975X chipset with ICH7: LGA775 CPU socket: Intel Pentium 4. Pentium D or Core 2 Duo CPU; DDR2 memory up to 800MHz; 8GB memory capacity; 2 x PCI Express x16, 2 x PCI Express x1, 3 x PCI slots; ATI CrossFire support; 7 x SATA and 2 x IDE ports; RAID; 1 x eSATA port: 2 x Gigabit Ethernet, 2 x FireWire and 6 x USB 2.0 ports: optical and coaxial audio output; silent cooling; 802.11b/g Wi-Fi; infrared remote control.

FEATURES VALUE OVERALL



New customisable mid-range printers from Ricoh make document workflow easier.

Perfect for any mid-sized office, the Ricoh MP C2500 and MP C3000 printers have everything you'll need for superior printing and document distribution. You can produce high impact colour documents that can be sorted and finished at the push of a button. And with Ricoh's customisable technology you can create more efficient workflow solutions. Accessing, outputting and distributing documents to your team just became a whole lot simpler.

Great Workflow Features

Ricoh's new ESA (Embedded Software Architecture) is a Java-based platform. that enables third party software to be customised and embedded inside a Ricoh MFP. With ESA you can draw on Ricoh's continually expanding library of solutions, such as integrated cost recovery or centralised web-based printing on demand. Or you can brief independent developers to build tightly integrated solutions that work

with your game plan. Outstanding Usability.



With a new full colour OWERTY graphic operating panel you can preview your

documents before emailing or printing them. (So you'll never process the wrong file again). Quickly sharing information is now achievable.

Great Productivity

In addition to a fast output of 25 and 30 ppm for both mono and colour, Ricoh's new compact in-line Booklet Finisher can create high quality 2400x600 dpi saddle-stitched documents instantly. With a Ricoh MP C2500/C3000 on your

team, your productivity and communication efficiency will rise as your frustrations reduce. To find out how a Ricoh colour printer can help your business, visit ricoh.com.au/smartofficecolour





Lightweight lightshow

RENG CP220

enQ's new CP220 data projector promises a number of attractive features for corporate presenters, but falls short of expectations. Designed for the mobile professional, this XGA (1024x768-pixel) unit weighs around 2kg with the supplied softcase and cables, and offers a claimed brightness of 2200 ANSI lumens and a contrast ratio of 2000:1 - which are pretty impressive figures for a product this small.

The CP220 also claims "Off and Go" operation, which lets you switch it off without worrying about cool-down periods. A capacitor inside the projector keeps the fan running when the unit is unplugged, stopping the 200W lamp from overheating - the primary cause of lamp failure. We'd need 3000 hours of testing time to be sure, but the short fan running time and residual heat after our tests suggest that you'd be wise to let it cool conventionally to avoid premature lamp replacement. (The projector has a "Quick Cool" setting that reduces standing time to 30 seconds.)

Colour match

Colour-conscious presenters may be interested in the sRGB mode, which promises colour matching with other sRGB-compliant devices. What's curious is that the projector is quite happy to let you play with colour temperature, contrast and brightness while in this mode, which rather defeats the object of having a fixed colour-space standard.





The projector is equipped with keystone adjustment (vertical only). which can be easily accessed via the minimalist cut-metal control pad. Alternatively, you can select automatic keystoning, which uses an internal sensor to correct the image based on the tilt of the projector. Both solutions are digital - so you'll lose image detail and may experience unwanted patterns on flat areas of colour - and the tilt sensor doesn't always work that well.

Because the CP220 uses a single Digital Light Processor (DLP) chip, colour convergence is close to perfect. but the five-segment colour wheel means that the rainbow effect will be particularly distracting to sensitive viewers - particularly during business presentations, which often involve high-contrast scenes. The Carl Zeiss optics may provide a sharper image, but the lens is narrow, so a long throw is needed to fill a big screen - for a 48in screen, you'll need a projection distance of around two metres.

Fan noise

The CP220 is fairly loud during operation, which is to be

expected from such a small, bright unit. Even in Economy mode, which reduces brightness and extends lamp life, the fan noise was

The cut-metal panel allows easy access to key features like digital keystone adjustment.

noticeable. Digital connections aren't supported, but composite, S-Video and component video inputs are (the last option requires a component to VGA adapter, which isn't supplied), and the screen can be set to a 16:9 aspect ratio for widescreen presentations.

Other features worth noting are

the VGA pass-through - which allows a second display during presentations plus the ability to downscale 1280x1024-pixel signals to the projector's native XGA. The sliding lens cover is another nice touch, as are the instant screen blank button and highaltitude mode. However, the single 1W speaker is nothing to shout about. Business users who are more concerned with portability than performance will probably like this projector, but \$3299 is too expensive for a unit that doesn't really stand out from the crowd. LAURENCE GRAYSON

BENG CP220 PRICE \$3299

VENOOR PHONE 1300 130 336 HRI www.hena.com.au

SPECIFICATIONS

Single-chip DLP: 4:3 aspect ratio: 1024x768 pixels; 2200 ANSI lumens: 2000:1 contrast ratio; 31-300in projection size: native resolution: 1024x768 VGA in/out; composite, S-Video, component in; 1 x 1W speaker; 31-34dBa noise; 248x78.5x199mm; 1.8kg

FEATURES				
VALUE		۰		
OVERALL	79		п	

7

4





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Portability over power

FULLTSU LIFFRONK 02010

hen mobility is more important than grunt, the Fujitsu LifeBook Q2010 is ideal. But it doesn't come cheap.

It weighs only 1.1kg with its standard battery and is less than 2cm thick with the lid down. A 1.2GHz Intel Core Solo U1400 CPU keeps temperatures down and minimises battery usage.

The magnesium-alloy chassis felt sturdy and the 12.1in (1280x800) screen displayed acceptable brightness and contrast from all angles. It exhibited little distortion when the lid was flexed, indicating good strength despite being only 7mm thick.

Worst case scenario tests — playing movie files off the hard drive with sound — on the two supplied batteries yielded good results. The three-cell Li-lon (weight 1kg) lasted 40 minutes while the larger six-cell battery (weight 1.2kg) lasted 208 minutes, an impressive score considering its light weight. The kerboard

was easy to use and four programmable buttons aid Windows navigation.

It scored 63 in our WorldBench 5 test, which is good for a low power system. Results showed that the Intel graphics chipset will only perform well with low-end 3-D graphics. However, this unit will perform nicely with business tools such as e-mail, spreadsheets and presentations. It has a fingerprint scanner and hardware level encryption to protect your files from theft.

on its own the LifeBook Q2010 has 2x USB 2.0 ports, a PC Card (type II) 3xt, a SD media card reader, a LAN/ VGA port, FireWire, Bluetooth and Wi-Fa Ab/g. When you're not on the road it resides in a docking station, which has a Super Multi DVP. Awd drive, four more USB 2.0 ports, a VGA out and LAN port. VILLOGIT There's no doubt this unit is uitraportable and it did well in our battery testing, but with a \$5499 price tag it's just too expensive. Isses surrow



FULLTSULLIFFBOOK 02010

PRICE \$5499 VENOOR Fujitsu

PHONE 1800 288 283

SYSTEM REQUIREMENTS

Intel Soio (1.2Gkb) U1400 CPU, IGB DDR2 (533Mkb) RAM, 1.2.1 in screen (1.280x800), SGGB Ultra DMA 200pm HDD, Intel 945GM Express chipset, Super-Mati DVD-RW (dustlayer), WH- 300 21 Jalvy, VQAX-HAY port w adapter cable, Gigabit Elbernet (on dock), VAB and (on dock), PC card slot (Type IJ), weight lkg (Wout PSU), 24kg (with dock and PSU), Iver international parts and labour warranty,

5

6

FEATURES WE WIND WALUE

Good price, ultraportable

ACER TRAVELMATE 3010

ood things do come in small packages, at least in the case of Acer's Trewllette 3010, which has all you need for a reasonable price. It's lightweight (1.6kg without power supply and with standard battery) but sturdy, though the screen displayed some distortion when flexed. Contrast levels weren't great on the 12.1in (1280x800) screen, especially from angles, but

screen, especially from angles, but otherwise fine to view.
It comes with Wi-Fi, Bluetooth, easy navigation buttons and a screen-mounted 1.3Mp (megapixe) camera

that swivels 180 degrees, It also has a cleverly designed 5-in-1 media card reader that takes up one card slot. The TravelMate 3010 also manages to accommodate a wide range of ports. The unit's small form factor is aided by the exclusion of an internal optical drive. However, a FireWire connected Super-Multi DVID-RW (stual-laver) is included.

The unit scored well in our WorldBench 5 benchmark, achieving above average results in many tests. The overall result of 81 was good for an Intel 1.66GHz Core Duc CPU with only 512MB of RAM (533MHz) and an Intel 945GM graphics chipset. Unfortunately, the smaller (3-cell, 200g) battery that came

with our unit was faulty, but we ran MobileMark 2002 on the supplied larger (6-cell, 350g) battery which lasted 210mins, while our worst case scenario

test (playing a DVD) lasted 138mins.

Acer is a great purchase. It has a strong selection of connectivity options crammed into a small package and good battary life as well. ISSES SUTTON

battery life as well. JESSE SUTTON

ACER TRAVELMATE 3010

PRICE \$2699

VENOOR Acer

PHONE 1300 366 567

URL www.acer.com.au

SYSTEM DECILIDEMENTS

anti-1.5GGH 7290 (con-tho-CPU.5JCMB
DDP2 CPL2079 RAM GSMMP), intel-45CM
Chipsel, 1.2 lin stress (128,060), Wi-6-Fa
Cat sades, 182,181 stress (128,060), Wi-6-Fa
Cat sades, 182,181 stress (128,060), Wi-6-Fa
Cat sades, 182,181 stress (128,181 stress), with differed sades, 182,181 stress, 182,181 stress, 183,181 stress,

FEATURES	H				- 1
VALUE	100				- 9
OVERALL					-



Security suite targets malware

KASPERSKY INTERNET SECURITY 6.0

hen it comes to the Internet, you can never take security too seriously. Thankfully, Kaspersky Internet Security 6.0 — a suite of antivirus, firewall, antispyware, antispam and Web-protection tools — is superb at detecting malware.

We looked at a pre-release build (a full version will be ready by the time you read this), and Kaspersky scored 100 per cent in nearly all of our malware detection tests.

Malware testing

In tests conducted by German research irm AV-Test.org, Kaspersky caught all boot, file, macro and script malware on a subset of the January 2006 WildList, a public list of widespread threats. It caught all of AV-Test's collection of bots, Trojans and backdoors. When deprived of signature updates from January 2006 and later, it caught 76 per cent of these backdoors, bots and Trojans, which suggests the suite is very good at detecting undiscovered threats.

The suite detected nearly all of AV-Test's samples of adware — sortware that produces often-unwanted pop-up ads and can track your Web-surfing habits. It also detected all malware samples within packed file archives (such a. zip). It looked within compressed program files such as ASPack and UPX and detected an excellent 83 per cent of malware hidden inside — bad news for virus writers looking to package old worms in new packaging.

Mistakes were few and far between. The program didn't clean up every single worm file, and a few clean files were incorrectly flagged as malware. Speed wasn't particularly impressive during the first system scan, although Kaspersky

does learn from previous sessions, and gets faster every time you use it.

Kaspersky's firewall was solid. blocking all attacks from inside and outside our test PC. Oddly the firewall settings aren't all in one place in the interface. Most options are in the Anti-Hacker Protection settings. but the ability to block specific ports resides in a separate area called Network

settings. Indeed, the program in general

is short on user-friendliness. What's missing?

The application leaves out a few tools that come as standard on competing products. For example, it doesn't have parental controls for blocking Web sites at certain times of day, or privacy controls to prevent certain text-based data from leaving your PC. It also doesn't support individual IM (instant-messaging) clients.

It does, however, have important security features such as rootkit detection, as well as protection against downloading dangerous scripts while online. For example, the suite prevented us from downloading a piece of software from a site strongly associated with

TREADED The latest version of Kaspersky's Internet Security suite is extremely effective, but its interface is not for the inexperienced. Neither is it the cheapest



Kaspersky Internet Security's main interface uses a nonstandard naming and organisation system for its security components.

of programs, although if you download it from Kaspersky's website, you pay \$94 for a one-year copy which works out as reasonable value. Newcomers should stay away, though, Narasu Rebbapragada AND RDBIN MORRIS

KASPERSKY INTERNET SECURITY 6.0

 PRICE
 \$94.16 (download)

 VENDOR
 Kaspersky

 PHONE
 (02) 9676 7340

 URL
 www.kaspersky.com.au

SYSTEM REQUIREMENTS

300MHz Pentium or Athlon processor; Windows 2000/Me/XP; 64MB RAM; 50MB hard disk space; Internet connection (for product activation); Microsoft Internet Explorer 5.5 or higher (for product and antivirus database updates via the Internet).

FEATURES SALUE STATE OVERALL SALUE S

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Camera with zoom

RICOH CAPLIO R4

ith a price that puts it up against Canon's lxus, the R4 is no ra tough battle for market share — particularly with its flimsy battery- and memory-card covers, and lacklustre finish.

The flash is positioned just above the main grip, which makes it all too easy to get your hand in the way. But it's an impressive feat of engineering that enables Ricoh to shoehorn a 7.1x optical zoom into such a compact model, as well as providing an impressively wide angle. It's a shame the aperture doesn't quite match the zoom, as the f3.3-4.8 range would benefit from being a touch faster. Shutter speeds, however, are accommodating, allowing exposures to range from a lengthy eight seconds to 1/2000sec. The menu system is a rather clunky affair and the camera does

tend to be quite noisy. Other features include an image stabiliser that shifts the CCD to compensate for camera motion, and a peculiar keystone adjustment (for straightening skewed shots of blackboards and the like).

Image quality proved to be a mixed bag. While the results were generally pleasing with good saturation and minimal fringing, we did experience excessive noise at higher ISOs. For cleanest results, keeping the ISO at 100 or lower is paramount. Some of our images were a little softer on detail than a 6Mp sensor should allow.

a far-reaching lens and fast startup times, but it's up against some tough competition. While many of the ingredients are right, they're often a little raw, MICHARI HAVMES



RICOH CAPLIO R4 PRICE \$599

VENOOR Ricoh
PHONE 1300 363 741
URL www.ricoh.com.au

SPECIFICATIONS

6Mp; max res 2816x2112; 26MB internal memory; SD Card slot (card not supplied); Lithium-lon battery with charge; 28-20mm range; 7.1x zoom lens; 13.3-4.8; Lom macro; ISO 64-800; shutter 1/2000sec; 2.5in LCD viewfinder; 320x240 video capture; 99x53x26ms, 155x

FEATURES		٠			6
VALUE		×			7
OVERALL	- 10	m			7

Slim camera has double vision

KODAK EASYSHARE V610

th a long-range 10x optical zoom, Kodak's EasyShare yof10 can bring the farthest subjects into full, detailed view. Unfortunately, this dual-lens camera also has a propensity for blurred photos at its highest zoom levels, plus disappointingly short battery life.

The 6.1-megapixel V610 is Kodak's second camera to sport two built-in lenses. The V610 has a 126mm-to-380mm (35mm equivalent) telephoto zoom lens that sits atop a 38mm-to-

ppointingly s Kodak's uilt-in 114mm standard zoom lens. When you're closing in on a subject, the V610's standard zoom handles up to 3x magnification; to go beyond that level, the telephoto lens kicks into action.

My outdoor shots usually came out sharp enough, but I got mixed results when shooting in indoor, lowlight settings. It sometimes took clear, colourful photos at maximum zoom, but occasionally had trouble focusing. And because it lacks image stabilisation, any slight movement produced a blurry shot. Compared with other point-

and-shoot cameras we've tested, the V610's images looked less sharp. The pictures were slightly underexposed, too, and white balance was a little off; we also noticed a slight greenish cast in some shots.

On the features side, the V610 impressed us. It offers wireless photo transfers via Bluetooth; in-camera photo stitching for panoramic shots; and a 2.8in LCD. The bad news: the V610 fared poorly in our battery test, lasting just 148 shots — the lowest result among point-and-shoot models we've recently tested.

What makes this camera shine

— its 10x zoom, ease of use and sleek
design — may be enough to compensate
for its shortcomings. GRACE AQUINO

KODAK EASYSHARE V610

 PRICE
 \$699

 VENDOR
 Kodak

 PHONE
 1800 267 588

 IRI
 www.kodak.com.au

SPECIFICATIONS

Max Focal Length: 380mm; Max Horizontal Image Resolution: 2832pixels; Max Aperture: 3.9 1/f; Installed Memory: 32MB; Image Format: DCF/DPOF/EXIF/

FEATURES	10 10 10 10 10	8
VALUE		7
OVERALL		7



Not a winning score

SONY CINESCORE 1.0

ew video producers have the budget for a custom musical score, or the time/equipment/musical skill to create one themselves, so Sony has released Cinescore 1.0.

Like SmartSound's QuickTracks, Cinescore lets you pick a theme and automatically arranges musical elements — like the intro, verse, chorus, break and finale — to create a custom soundtrack that fits the length of your scene perfectly,

Twenty themes are provided, ranging from wide cinematic audioscapes to tight, punchy soundtracks (with a couple of cheesy numbers for good measure), and further theme packs are on the horizon. Cinescore also comes with a wide selection of audio transitions, too.

Unlike QuickTracks, Cinescore allows for a much greater level of adjustment after the initial track is in built. As well as selecting the starting section, mood and arrangement, you can add markers called "Hints" to the timeline, which allow you to tweak Section, Mood, Tempo and Intensity at key points, with a high degree of control.

For instance, Intensity has a sliding percentile scale that lets you adjust how "layered" the music is, with higher values bringing in more instruments. This can be a gradual climb or descent using the Generate setting, or you can use the Linear of Hold switches to hit specific values — to suddenly shift from a 100 per cent, full orchestral movement down to a 15 per cent full oscilo, for example.

Altering the Mood setting lets you switch variations for the theme, moving seamlessly between "Live Rhythm



Cinescore
can produce
impressive
results, but
there's plenty
of room for
improvement in

Section" and "Massive Party" in the Blizzard of Sparks theme, for example. This can be really useful if you've assigned audio motifs to separate characters and you want the music to shift as the camera switches between their actions.

The degree of customisation available in Cinescore is immense, and it's here that the software struggles with poor interface design. Built on the same front end as Sony Vegas, the customisation takes place in two dialogue boxes, rather than directly on the timeline. Progress is bogged down in trial and error - particularly as the percentage values don't always provide a useful indication of the change that will occur - and it's often impossible to make changes at the exact point you need - which explains why they're called "Hints". The absence of a preview button for transition selection is also an annoying oversight.

TEOMAT Cinescore is impressive for a first attempt, and provides commercial videographers with high-quality licence-free scores, plus a level of control and customisation previously unavailable. But it can be frustrating to use, and would be far more effective as a plug-in for a video editing package rather than a standalone book. Lusterier Bearson

Windows 2000 (SP4) or XP; 1.5GHz CPU; 512MB RAM (1GB recommended); 200MB hard disk space for program installation; 1.7GB for installation; DVD-ROM drive

FEATURES W ...

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SERIE DRAWPLUS 8 0

nother year, another edition of Serif DrawPlus -- we're now on to version 8.0 of this affordable alternative to high-end, high-priced professional drawing packages.

The first thing that strikes you on booting up Serif's vector-based drawing software is how easy it is to use. The interface is beautifully laid. out, with intuitive options helping you to quickly create your first document. There are new palettes and a colour wheel to give you total control over swatches. It'll be easy for even the most inexperienced artist to start creating. Other fresh facilities include a selection of design templates, though they are only marginally useful because it's so easy to start from scratch. The program includes a selection of photo-editing tools, including a red-eve remover, It's possible to open and edit Photoshop documents saved as PSD files, and you also get a selection of photo effects to create artwork using snaps.

DrawPlus is never going to take

it'll handle your basic photo-editing needs. Serif DrawPlus can even work as a limited CAD (computer-aided design) tool. You can import and edit AutoCad documents that have DXF and DWG file extensions. The program is also set up to let you design Web sites. featuring support for animation and Web graphics. There's a huge library of realistic brush-strokes -- there may even be too many to use. The availability of more than 50 dry-paint effects might seem excessive, but not to the developers. Serif claims that the houndaries imposed by vector-based drawing applications "no longer apply" to

DrawPlus, because you can create artwork using nearly 200 vector and bitmap-based brushes. With pastel, charcoal and watercolour categories.

the place of Photoshop in a design

professional's arsenal, but if you don't

mind the irritation of importing images

into a DrawPlus document to edit them.

there's a ready-made brush for whatever

SERIF DRAWPLUS 8.0

\$229 (\$119 Academic price) VENDOR Communique

PHONE (02) 9622 5624 www.comm-unique.com.au

SYSTEM REQUIREMENTS Pentium or Athlon PC: Windows 98 SE/

Me/2000/XP: 32MB RAM: 205MB hard disk space; SVGA (800x600 resolution, 16bit colour) display or higher; CD-ROM drive: internet account and connection required for online resources

CEATHDES ----VALUE ----**OVERALL**

it is you're looking to design. You can even create your own brushes or convert any DrawPlus 8.0 object to a brush using a single click. We found the program to be dynamic and flexible. You're no longer restricted to working with circles, squares, lines and shanes, It's certainly not Adobe Illustrator, but what it lacks in functionality it makes up in pricing.

You get a large selection of clip art called Objects - although such elements will always appear amateurish alongside photos and professional artwork, Printing is a simple process, and you can export completed documents to PDF.

VERGICE A jack of all trades and master of most, this is an excellent update to a well-loved program. It's simple to use, it includes a huge library of effects and is a highly customisable tool. Best of all, it's easy to produce good-looking results then print them or export to PDF and the Web. The PDF-editing feature is very useful. Professional designers will require more grunt, but it'll make a great buy for amateurs of all levels. particularly as you can use it as an image editor. MATT EGAN

DrawPlus 8 D makes it easy to produce good-looking results to print or export to PDF or the



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12 12 X

Smallest TV tuner

AVERMEDIA AVERTV DVB-T VOLAR

f you want an external digital TV tuner for your notebook, AverMedia's AverTV DVB-T Volar is the smallest we have seen, but it fails to satisfy in many areas.

Physically, it's a USB 2.0 device, around the size of a lighter. After prolonged use, it doesn't heat up too much, and it has a blue power LED. It works well enough so that you can enjoy watching SD or HD programs, but AverMedia's AverTV software can be frustrating to use.

Changing channels took a few seconds (likewise, it took a few seconds to start recording programs), and the channel list was not easily accessible by right-clicking. HD recording was also flawed with this program. The picture was captured without any sound. This is despite us installing the latest version of AverTV (6.0.3.26). SD programs were recorded with sound and played back in Windows Media Player.

Time-shifting has to be activated before you can pause live TV and is not well implemented. Once it's enabled you are unable to change channels until you disable it.

The scheduler allows you to easily record programs in a once-off, daily or weekly frequency. You can also set the program to record in silent mode. which means the program will record in the background. This is helpful if you don't want to be disturbed while you're using your computer for other things. Conversely, you can set AverTV to be your deskton background, but only if you don't mind watching TV with icons scattered in front of the screen VEROICT The Volar is handy for a notebook and it's inexpensive. Its

tuner found all the digital channels and displayed them with good signal strength, but it was let down by its software. It needs more convenient time-shifting capabilities and the ability



to record HD programs with audio FLIAS PLASTIRAS

OVERALL

AVERMEDIA AVERTY DVB-T VOLAR PRICE \$105 VENDOR Altoch DHONE (02) 8831 9999 www.altech.com.au SPECIFICATIONS HSR 2 0 - SDTV - HDTV - AverTV software-BDA driver; time-shifting FEATURES 00 MI VALUE 8

Digital audio player

SAMSUNG YP-Z5

The YP-Z5 from Samsung offers similar storage and a similarlooking chassis to the iPod Nano. with a price tag that's not far from its Apple rival. While there's no contacts database, games or calendar and initially the YP-Z5's control system seemed a bit fiddly, these aren't major concerns.

It's more robust than the Nano. though not as slim, and feels nicer due to the extra weight. The menu system is

intuitive and loading songs is a simple process. You have the option of going through Windows Media Player, or you can merely drag-and-drop in the manner of an external hard

> One thoughtful addition is a

dedicated volume control on the righthand side. This avoids the occasional confusion, and ear pain, that can be caused by a shared select switch and volume button. There's also a play/pause switch, as well as the general navigation and select buttons, which allow easy operation that's well worth the busy interface

As well as music files, the YP-Z5's generous 1.8in portrait-format screen can display JPEG's, although with a lower resolution than the Nano as images on the larger display lose some clarity. The screen seems robust and, while prone to smudges, didn't scratch easily. Battery life was impressive, lasting around 27 hours (though required a few run-downs and recharges to reach its potential) and sound quality was solid, with a comprehensive range of EQ settings.

It's available in black, silver, white and pink versions and we recommend

you ditch the supplied headphones. VERGICI This is a strong attempt at cracking the mid-capacity portable audio player market from Samsung. It won't win any prizes for design originality, but there's no denying that the YP-Z5 looks and feels good and has great battery life. DAVID PRICE

SAMSUNG	(P-Z5	-				
PRICE	\$379 (4GB)					
DISTRIBUTOR	Samsung					
PHONE	1300 369 600					
URL	www.samsung.com.au	amsung.com.au				
SPECIFICATIO	SPECIFICATIONS					
	Digital audio player; compatible with MP3,					
	WMA and JPEG files; 1.8in, 128x160 TFT					
	screen; claimed battery life 35 hours of					
	playback; actual battery life approximately					
	27 hours; 41x11x89mm; 50g					
FEATURES		8				
VALUE		9				

OVERALL A SECTION A

RangeMax Next, Extending the Possibilities of Your Wireless Network



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Touchless WiFi Security – No hossle Double-Firewall Protection

Compotible with Droft 802.11n Specifications*

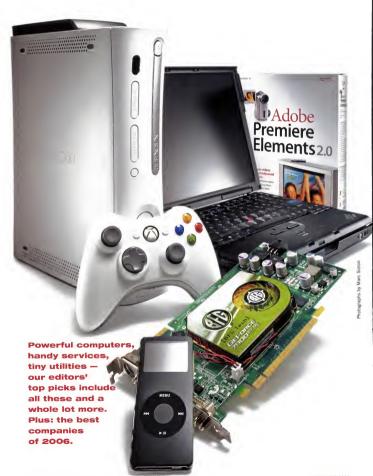


*Draft 802.11 in Specifications refers to draft version 1.0 March 2006; Netgear makes na commitments to upgradeability to ratified 802.11n and upload times are based an file transfers between PCs an the same network.



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best products of the year

EDITED BY ALAN STAFFORD

ou know how many new-product pitches we get every year? Thousands, each declaring that the item is the best in its category. Though many of the companies making these claims are clearly delusional, some creations do stand as superbly designed top performers in their field — and you'll find all of them right here in our roster of the 100 best products of the year.

We rated each candidate on its design, performance and specifications. We generally did not consider price in our evaluations; instead, we looked for products that represent the cream of the crop. But in compiling our list, some products were such great bargains that we couldn't ignore them. Of course, ranking notebooks and Linux distributions in one place is tricky, but we assessed them as consistently as we could.

We've also identified a few of the year's most noteworthy companies, including our pick for the loser of the year.

PRODUCT OF THE YEAR

1 NTEL CORE DUD notebook/desktop CPU (\$350 and up) Intel's Core Duo provides multitasking power never before possible on a portable PC, and yet it supports astounding battery life for mobile devices. The Core Duo processor is so good that it's the CPU of choice not only for Windows notebooks but also for Apple's Windows-caaable notebook and for desktop Mace.

Introduce to recover and to deachop indexis.

In today's mobile world, Core Du gives Intel a leg up. AMD's

Athlon 64 X2 dual-core (#2) is astoundingly good, but AMD hasn't yet captured that power in a mobile version; and its notebook processors aren't nearly as potent or as battery-efficient as Intel's. www.intel.com.au



COMPANY OF THE YEAR

VAHOO!

Yahoo has progressed far beyond being a mere search engine; it has emerged as the number-one online developer, on the strength of a great revamp of Yahoo Mail (#24), smart acquisitions of Web stars such as DeLicio.us (#70) and Flickr (#58), and development of the Yahoo 360 personalised Web spaces. Google may get a lot more attention, but Yahoo has been get-ting more things accomblished.

AMD ATHLON 64 X2 dual-core desktop CPU (\$280 and up) The most powerful desktop CPU ever made had a dual-core design first. If you need full power for increasingly demanding applications and you're tied to a desk, X2 is for you, www.amd.com

APPLE IPOD NANO digital audio player (\$219 to \$359) You get up to 4GB of capacity in a tiny device that nevertheless has room for a crisp colour display. It's scratch-prone, but it's still cool. www.apple.com.au

GOOGLE EARTH satellite imagery (free) News channels use Google Earth to zoom in on Iraq; you can use it to focus on neighbouring houses, or to explore the rest of the world from your desktop. www. google.com

video editor (\$172) This strong, stable video editing application costs about one-eighth as much as Premiere Pro, Adobe's professional video editor. And it's so good you may not notice the difference. www.adobe.com.au

CANON EOS 30D digital SLR camera (\$2299) An 8.2-megapixel shooter, the EOS 30D makes many of the pro-level features from Canon's EOS 5D available at a friendlier price. It also earned extremely high marks in our image-quality tests. www.canon.com.au

YOUTUBE.COM video-sharing site (free) Enjoy watching videos of every kind at this massive community of amateur videographers, and upload your own productions — at no cost. www.youtube.com

APPLE BOOT CAMP Mac dual-booter (free) Astonishingly, Apple has finally given its blessing to running Windows on a Mac with this utility. Next up: running the Mac OS on a Windows box — or pigs flying through the sky, www.apple.com.au

DOBE PHOTOSHOP ELEMENTS 4 image editor (\$164) The latest version of Elements is the most elegant and powerful image-editing and -organising application available for under \$1493 (the price

of Adobe's pro-level Photoshop CS2). www.adobe.com.au

MOZILLA FIREFOX 1.5 Web browser (free) The 2005 product of the year continues to improve, with a better set of features and stronger security than Microsoft's Internet Explorer offers. www.mozilla.com







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570 SLI



K9N SLI Platinum

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- Silent Sink design



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 ATX Form Factor
 Silent Heatsink

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11 ENGADGET.COM gadget

blog (free) Even if Engadget decided to devote itself to game shows and golf, we'd probably still read it, just because the blog's writing is so snarky and entertaining. www.engadget.com

12 TOSHIRA DOSMIO GRO

power notebook computer (\$4299) The jazzy Qosmio notebook line got even better this year. In fact, the G30 is the best media centre desktop replacement we've ever seen. Toshiba has also just released a version that comes with an HD DVD-ROM drive. www.isd.toshiba.com.au

13 NVIDIA GEFORCE 7600GT

graphics card (\$350) Our list doesn't focus on outstanding values, but how could we overlook this powerful chip set? At \$350. it's a steal. (See PC World, August 2006) page 72, for reviews.) www.nvidia.com

14 GOOGLE search engine (free) Google's clean, fast-loading interface helps it remain the most-used and bestloved search engine on the Internet. Have you googled anything today? www.google.com

SONOS ZONEPLAYER 80 digital audio streamer (\$699) The ZonePlayer offers the most elegant way to play digital audio throughout your home; this version omits its predecessor's amplifier, thereby reducing the price significantly, www.playback.com.au

Oosmid

YAMAHA RX-V4600 hometheatre receiver (\$3999) The RX-V4600 is the first receiver to deliver highdefinition radio, which sounds better and comes in more clearly than regular old AM and FM signals. Too costly? Consider Boston Acoustics' tabletop Receptor Radio HD, which lists at just \$399.

18 PIONEER BDR-101A Blu-ray drive (\$US1000) The first Blu-ray drive on the global market is not a set-top player for high-definition movies, but an internal PC drive for backing up massive amounts of data, www.pioneer.com

19 ADOBE PHOTOSHOP CS2 image

editor (\$1493) Anything that you want to do with a digital image, you can do with Photoshop CS2. Not a pro? Avoid CS2's expense by onting for Adobe's Photoshop Floments (#9) www adobe com au

CITRIX GOTOMYPC 5 remote

access (\$US20 per month) Turn any Web-connected computer into a clone of your distant desktop, so you can gain access to programs, files and networks, GoToMyPC is a bit pricey, but its speedy, secure, hassle-free approach is unbeatable. www.gotomypc.com

21 MIONET remote access (\$US7 per month) Two-way remote access permits you to tunnel into your work computer from home and vice versa - or to securely share resources with others - without having to spend time worrying about firewalls. www.mionet.net

22 UBUNTU Linux distribution (free) The Breezy Badger release of Ubuntu has a desktop interface that Windows users may

find reassuringly familiar. The new Dapper Drake version should be out by the time you read this, www.ubuntu.com

3 MOZILLA THUNDERBIRD 1.5 e-mail application (free) Excellent junk-mail filtering and efficient address gathering make Thunderbird the best e-mail application for vour electronic correspondence, regardless of price, Look out for the version 2 in beta coming soon. www.mozilla.com



I love RedOctane's Guitar Hero because it lets me indulge in the air-guitar fantasies that began for me when I first heard "Crossroads".

www.vamaha.com.au

This Sony PlayStation 2 game (\$130) is completely addictive, and I've never run into a title with such wide appeal across age and gender lines. Everybody wants to go all Clapton with the included guitar once they

see it in action. Well, okay, a few

arrhythmic types don't care. but they probably weren't airguitaring "Infected" back in the day, either. - Ramon G. McLeod

www.guitarherogame.com









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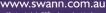
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- Includes cameras, receiver, remote control, 4 security stickers, power adapters & more

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24 YAH00 Mail (beta) Web-based e-mail (free) This limited beta offering rates as the best Web mail client we've seen. Its Ajax-based interface convincingly imitates Outlook Express, without carrying over that program's clutter, www.yahoo.com

free) Use this utility to set up your desktop PC as a simple file server that friends and family can access securely over the Internet. Avvenu is great for sharing digital photographs without going to the trouble of e-mailing them. www.avvenu.com

BLOGGER blogging service (free) It's not the most sophisticated blogging tool around, but it is free and easy to use. It works with Google's Hello to support nocost photo hosting and posting, and you can upload pictures from your camera phone to your Blogger blog, www.blogger.com SONY CYBER-SHOT DSC-R1 advanced digital camera (\$1799) This 10.3-megapixel camera is hardly a digital single-lens reflex model, but for many users it's as close to one as they'll ever need. And unlike most digital SLRs, the DSC-R1 has an LCD monitor that provides a live preview.

28 APPLE MAC MINI value desktop computer (\$999 to \$1299) Talk about dual-personalities: this tim, inexpensive, dual-core Apple box has the heart of an Intel machine and the soul of a Mac. It runs the Mac OS natively, and with Boot Camp it can run Windows XP, too. www.apple.com.au

of your subject. www.sony.com.au

APPLE IPOD digital audio/ video player (\$449 to \$598) The videoenabled iPod is the only device equipped with a 2.5in screen that we would consider watching movie trailers, music videos or even our own home movies.

30 LENOVO THINKPAD X60S ultralight notebook (\$3.499) Though this rock-solid 1.4kg notebook doesn't carry a built-in optical drive, it has the best keyboard you'll find on an ultralight; and with the latest in Core Duo processors, it's a great performer, too. www.lenovo.com/au

31 CREATIVE SOUND BLASTER
X-FI sound card (\$270 to \$800) Creative
deserves credit for introducing high-end
audio — including multichannel DVD-Audio
playback — to desktop PGs. The X-Fr has
7.1-channel output and dedicated RAM for
storing sound samples, thus boosting game
performance when heavy sound processing
is needed. www.aut.creative.com

ALIENWARE AURORA 7500 power desktpc computer (32276 and up) You can configure this flashy PC with the best of everything, including AMD Athlon 64 X2. WIDIA SLI graphics, and the Agela PhysX processor. You'll apy dearly for it, all right, but this gaming rig is tops if you want to play, www.alienwaresystems.com.au

HARDWARE COMPANY OF THE YEAR



With a huge R&D budget and a single-minded taskmaster running the show, Apple once again introduced products that made everyone else look bad. iPods (#29) that play video took the player to the next step, Core Duo-based Macs (#28) have expanded the market for Intel chips, and Boot Camp software (#8) has opened the door to running Windows on the Mac hardware. We continue to hope that some of the Cupertino crowd's design ideas will trickle down to the rest of the tech industry.



44 AUSTRALIAN PC WORLD SEPTEMBER 2006



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- Organise Research Instantly View online encyclopedias and research information from popular Web sites
- · Get instant information on Product Updates Get up-to-date information, competitive pricing. inventory details and more by linking directly to the Web sites of manufacturers, supplier and











33 APPLE ITUNES digital audio software (free) Not just a conduit for files between Apple's Music Store and an iPod. iTunes is great even if just for your deskton. It's compatible with both Macs. and Windows PCs. www.apple.com.au

34 OLYMPUS EVOLT E-330 digital SIP camera (\$1799) The F-330 shows you a live preview on its LCD - a first for a digital SLR - and it has a useful dustremoval feature (addressing a common bugaboo that afflicts such cameras). www.olympus.com.au

CREATIVE ZEN VISION: M digital audio/video player (\$470) Exceptional screen quality, a responsive interface and great battery life make this portable player a worthy alternative to an iPod, if you like to run wide of the herd. www.au.creative.com





CONCLE Desktop search (free) Where did you but that file? To find it you could spend 10 minutes using Windows' search utility - or 10 seconds using Google Desktop, www.google.com

OPERA 9 (RETA) browser (free) Opera deserves more exposure than it usually gets. Opera 9 is loaded with polished out-of-the-box features. such as useful ad and graphics blocking. www.opera.com

38 MITSUBISHI XD460U projector (\$3050) The XD460U ranked high for overall image quality in our tests. making it a great choice as a crossover projector for both conference- and livingroom use. It relies on a five-segment colour wheel to achieve better imaging. www.mitsubishi-electric.com.au

STUMBLEUPON Browser Add-On (free) When you click a toolbar button in Firefox, it will transport you to a random site that fits your preferences. www.stumbleupon.com



NOSCRIPT 1.1.4 browser addon (free) Block hazardous Java Scripts site-by-site in Firefox (the browser itself blocks either all JavaScripts or none). www.noscript.net/whats

41 WEBROOT SPY SWEEPER 4.5 antispyware (\$60) Spy Sweeper catches more stuff than its competitors do. and it provides sound advice on which adware and spyware pieces to remove. www.webroot.com

MICROSOFT NATURAL ERGONOMIC KEYBOARD 4000 (\$80) An ergonomically optimised keyboard, the Ergonomic Keyboard 4000 swells upward in the middle so you can position your hands and wrists naturally. www.microsoft.com.au

43 WESTERN DIGITAL RAPTOR X hard drive (\$560) Though the Raptor X has just 150GB of storage space, it's the fastest hard drive we've tested. Its see-through window lets you watch it work (if your PC's case has a window, too).

www.westerndigital.com

44 ATI RADEON X1900 XTX graphics card (\$900) Cards based on ATI's X1900 XTX chip and on NVIDIA's GeForce 7900 GTX chip (#69) compete for the fastest gaming performance. We think the ATI board delivers slightly better image quality, hence its higher ranking. www ati com

JAVACOOL EULALYZER PERSONAL 1.1 licence analyser (free) We're always urging you to read the end-user licence agreements that pop up when you install software - but who has the time or the legal background to

STANT MESSAGING CLIENT



Llove Trillian because it means I don't have to decide which IM client to adopt, Cerulean Studios Trillian 3.1 (free) works with nearly all of them. Its interface is beautiful. especially compared with AIM - hoo boy, that thing's ugly, I have Trillian set up to log my conversations, so when I forget something I said, I can look it up easily. I also like being able to set

up alerts for when people are online.

and to issue a command from my notebook that shuts down the program on my desktop. A new version, called Astra, should be released later this year. - Alan Stafford www.ceruleanstudios.com



EVOL>E

TO TOK PRINTABLE DVDS



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read and understand end-user licence agreements? Just copy and paste EULAs into FUL Alvzer, and it will tell you whether you're getting into something dubious. www.iavacoolsoftware.com/eulalyzer.html

46 EIZO FLEXSCAN S2410W 24in widescreen LCD monitor (\$2875) This is the first 24in display to take colour as seriously as a graphics professional does. Its flat, touch-sensitive electrostatic switches are much more comfortable to use than buttons, www.eizo.com.au

47 KOSMIX.COM search engine beta (free) Kosmix categorises search results into major content areas of health, travel and politics — a valuable feature. though you'll obtain fewer results from Kosmix than you would from Google or Yahoo, www.kosmix.com

ASIIS ARN32-SII DELUXE motherboard (\$290) This motherboard packs every feature you could want, including NVIDIA SLI graphics support, RAID support, six SATA ports and plenty of options for overclocking. www.asus.com.au

49 DELL ULTRASHARP 3007WFP 30in widescreen LCD monitor (\$2899) Seeing this humongous, high-resolution LCD after spending hours in front of a 17in or 19in model is a bit like turning a corner and walking into a billboard. www.dell.com.au

MEEBO (alpha) instant messaging (free) When you're away from your own PC, you can still connect, Use this utility (still in alpha) in an Internet cafe to access AIM, GTalk, ICQ, Jabber, MSN or Yahoo buddies by browser. www.meebo.com

COREL PAINTER IX.5 graphics software (\$799) Corel's painting program does a fine job of mimicking real paint and canvas, watercolour and paper, and charcoal and paper. Paint runs and bleeds just like the real stuff does. A recent upgrade introduces a rubber stamp and new photo painting capabilities. www.corel.com.au

CANON PIXMA IP6600D photo printer (\$399) Who needs a photo centre when you can get prints this good at home? For better results you have to use Canon's special (and expensive) paper. www.canon.com.au

54 FMC RETROSPECT PROFESSIONAL 7.5 backup software (\$169) This watchyour-back application carries two unique client apps so you can back up as many as three PCs; competing programs make you buy extra licences. http://australia.emc.com

Adobe

In the 1990s, Adobe was known for its professional software: its dumbed-down consumer products didn't fare so well. Now however, the company makes stellar sub-\$200 apps that regular people can use - for example, Premiere Elements 2 (#5) and Photoshop Elements 4 (#9) - while continuing to improve its pro applications. How can Adobe afford to sell an app with 90 per cent of Photoshop's power for only 10 per cent of its price? Volume, volume, volume,

NETWORK MAGIC home networking (\$US4 per month) Even when every element of your home network seems to have been set up correctly, there's invariably a baffling snag, Network Magic helps you configure your network with minimal hassle. www.networkmagic.com





BITDEFENDER 9 Standard antivirus (\$45) The Best Buy winner from our most recent roundup of antivirus software, BitDefender 9 provides top-of-the-line protection against a rogues' gallery of electronic miscreants.

SAGE SOFTWARE SIMPLY ACCOUNTING BASIC 13 small-business finance (\$65) if you're still trying to manage your business finances in Excel or Quicken, you owe it to yourself to invest \$65 in this entry-level small-business accounting package instead. www.sagesoftware.com

FLICKR photo-sharing site (free to \$US25 per year) Yet another Yahoo property, Flickr wins out as the best community-based photo-sharing site. Nicest feature: you can tag photos

 yours or others' — with keywords and then browse pictures based on those keywords. www.flickr.com

DVD burning (\$US100) Nero 7 Ultra Edition lets you copy data, edit high-def video, encode 7.1-channel audio, play with a dance-music synthesiser and lots more. www.nero.com

NUANCE DRAGON
NATURALLYSPEAKING 8 voice
recognition (\$165) The

recognition (\$1.65) The latest Dragon is probably the best voice-recognition software ever, though it won't make keyboards obsolete. It works best for dictating text (especially if you haven't completed your Mavis Beacon Teaches Typing lessons). www.naunce.com/naturallyspeakine

Carl Lacie D2 HARD DRIVE SERIAL ATA external hard drive (\$908) in our tests, this 4006B drive with an External SATA-150 interface and a 7200rpm mechanism outperformed every USB 2.0 or FireWire 400 drive we evaluated www.lacie.com/au.

QNEXT 2 P-T0-P communications (free) Not just for instant messaging, this Java-based suite supports IM, videoconferencing, VoIP, file

sharing, music and photo sharing, and remote PC access (it won't wash your car or make you dinner, though), www.qnext.com

63 SALLING CLICKER 3 presentation remote (\$US24) Use this utility to turn a Bluetooth-enabled mobile phone into a remote control for changing presentation slides or switching songs on a media player. www.salling.com

photo scanner (\$775) The flatbed V700

has a maximum optical resolution of 6400dpi, a significant advance over the 4800dpi competition. www.epson.com.au

MINDJET MINDMANAGER PRO 6 dataorganising software (\$461)
For people who swear by "mind mapping" — using software to organise and manage information through flow-charting — this app is the best we've sean. www.mindsystems.com.au.

MICROSOFT XBOX 360 game console (\$500 and up) With a pair of 3.26Hz CPUs, half a gig of RAM, and built-in wireless, the Xbox 360 can run games in high def.

Www.xbox.com.au

S FUJIFILM FINEPIX
E900 point-and-shoot digital
camera (\$585) Fujifilm's 9-

megapixel point-and-shoot captured very sharp images with low distortion, earning top scores in our tests. www.fujifilm.com.au

NVIDIA GEFORCE 7900

GTX GPU (\$950) Graphics cards that use this power-hungry processor are so expensive that you'll need to sign on for a second paper route to pay for it. But the payoff is excellent gaming performance. www.nvidia.com

DEL.ICIO.US social networking (free) Both an excellent way to store and categories bookmarks and an impressive social experiment, Del. icio.us invites you to share your favourite links with friends and larger communities. http://del.icio.us

67 DIGITAL AUDIO/VIDEO PLAYER

I love the iRiver Clix, a 2GB successor to the 1GB U10, because it's smaller and cuter than the video-enabled iPod despite packing a similar-size (2.2in, 320x240pixel) display. I simply transcode files from the



television shows I've recorded, for free. The Clix (\$299) has FM radio and Flash games, and it holds about 28 hours of audio files or 4.5 hours of video files. – Danny Allen www.iriver.com.au



notes about sites (if you have opened an Amazon.com account). Take that, Google. http://toolbar.a9.com/

THINKFREE OFFICE ONLINE office suite (free) ThinkFree gives you Office-compatible word processing, spreadsheet as well as presentation applications in a browser

window www.thinkfree.com

GREASEMONKEY Firefox extension (free) Now here's a mechanic you can trust. Greasemonkey allows you to add community-built scripts to the Firefox browser. Hundreds of useful scripts are downloadable for free. http://greasemonkey.mozdey.org/

NEWSGATOR FEEDDEMON 2 RSS reader (\$11S30) With FeedDemon's ontions, you're just a step shy of having news injected intravenously. www.hradeoft.com

SYSINTERNALS ROOTKIT REVEALER 1.7 antispyware (free) This free tool can't prevent rootkit attacks. but it can determine whether your PC has been compromised by them. www.sysinternals.com

📑 SANDISK HITRA II USB drive (512MB \$74.99 or 1GB \$134.99) SanDisk has recently designed one of the best USB keys we have seen to date. The SanDisk Ultra II comes in the standard SD card form factor of 300x200x2mm and will work with anything that takes SD. www.sandisk.com

OLYMPUS E-330 D-SLR digital SIR camera (\$1799 for body and 14-45mm lens) The Olympus E-330 uses

an ingenious arrangement of sensors and mirrors to enable the first live preview in a D-SLR. www.olympus.com.au

SQUEEZEBOX WIRELESS NETWORK MUSIC PLAYER (\$499) If you're tired of having gigabytes of digital tunes languishing on a desktop PC, far from where you listen to music on your stereo, check out the topnotch new Squeezebox Wireless Network Music Player. www.wickeddigital.com.au

FI.DER SCROLLS IV: OBLIVION video game (\$89.95) It plays well, sounds great and looks absolutely stunning. Oblivion is a must-have purchase for any solo RPG fan and would be a great introduction to the genre for anyone else. www.elderscrolls.com

COOR F TALK RETA Web service (free) If you rely on Gmail and have built up a large address book, Google Talk lets you integrate text and voice messaging very easily, www.google.com

PANASONIC VIERA TH-42PV500 plasma TV (\$3799) One of the best plasma units we have seen and good value too, http://panasonic. com.au

T3 SECURITY KEY PC security system (\$99) The T3 Security Key from TISS (Total Internet Security Solutions) is a hardware and software solution that adds. an extra layer of security to your Windows desktop, www.warcom.com.au

MICROSOFT LIVE MAIL BETA Web mail (free) Most will appreciate the intuitive and powerful new interface of

> for beta software, there are holes to plug, but Live Mail is shaping up well, and we look forward to seeing the finished article. http://ideas.live.com

🖴 6 PIONEER DVR-A11XLA DVD burner (\$99) This Pioneer optical drive has placed the company back on top in our Best Buys charts. It produced excellent quality burns and didn't falter once in any of our tests, www.pioneeraus.com.au

SERIOUS MAGIC OVATION PowerPoint add-on (\$US100) Import PowerPoint slides into this tool and add fancy video effects to make your otherwise boring sales presentations the talk of the office www.seriousmagic.com

WORDPRESS blogging tool (free) Two practical controls make this product stand out: photos and art are resizable on the fly inside the editing space, and dividing a blog entry into two parts is simple http://wordpress.org

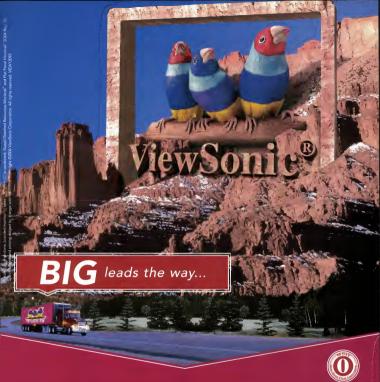
MAZON AS TOOLBAR search toolbar (free) Share bookmarks among multiple computers, and store

COMPANY OF THE YEAR

SONY

We get the feeling that Sony doesn't trust people. Many of its ills over the past year involve copy protection: first was the fiasco with its music CDs in the US, which installed rootkits on PCs to hide digital rights management spyware, thereby exposing the computers to viruses. Then came delays in the delivery of Blu-ray drives due to difficulties implementing a second copy protection scheme. And as a result of the Blu-ray problems, Sony had to push back its PlayStation 3 console to November, All this from the company that virtually pioneered copying with the Betamax.







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ESP MORILE POWER 150W (\$69) In our tests, the Mobile Power 150W, a small power inverter that will turn your car's 13V DC cigarette lighter into a full three pronged 230V AC power outlet, worked without a hitch and would be great if it came standard in all cars. www.anvware.com.au

SONY GRAND WEGA KFE50A10 rear-projection TV (\$3999) The Grand Wega is an outstanding television that is surprisingly of a high quality for its price. www.sonv.com.au

몸 9 TOSHIBA HDD-J35 HD digital set-top box (\$1699) As long as you're not too worried about how it looks, the HDD-J35 is an awesome PVR, with outstanding HDTV support, www.castel.com.au

PANASONIC PT-AF900F projector (\$3299) This was the sharpest in our recent projector roundup. We recommend it for home theatre viewing or for the boardroom. www.panasonic.com.au

91 KINGSTON DATA TRAVELLER FLITE PRIVACY EDITION USB drive (\$549 for 2GB) This USB drive comes with all you need to painlessly keep data secure. It's a perfect solution for both securityconscious corporations and consumers. www.kingston.com

🗩 🚾 TI AMD DUAL CORE 3800 PC (\$1450) The TL AMD Dual Core 3800 offers a good balance between performance, price and features. www.ticomputers.com.au

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SONY FRICSSON P9901 smart phone (price not available at press time) Sony gave us an exclusive preview of this phone and we predict this will prove to be an amazing product - there's not much it cannot do. www.sonvericsson.com

94 HP PHOTOSMART 3310 All-In-One printer (\$549, \$100 cash back offer) HP's Photosmart 3310 All-In-One device is a well-rounded imaging solution for the home - it can print, scan, copy and fax documents and it's very easy to use. www.hp.com.au

ACER ASPIRE 9504WSMI notebook (\$2999) If you're looking for something powerful with great entertainment potential, then look no further than the Acer Aspire 9504WSMi. www.acer.com.au

PANASONIC NV-GS180 digital camcorder (\$1099) This camcorder represents exceptional value for great video quality. www.panasonic.com.au

JBL L890 home theatre audio system (\$2499) An excellent choice for anyone wanting speakers that marry performance with power, www.ibl.com; www.convoy.com.au

CREATIVE HN-700 noisecancelling headphones (\$100) Travel by plane often or work in a noisy office? These headphones will give you back some peace at a reasonable price. www.au.creative.com







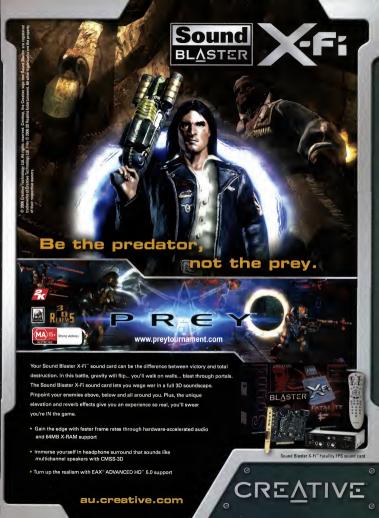
www.dse.com.au

LOGITECH HARMONY 880 ADVANCED UNIVERSAL REMOTE (\$399) If you're in the market for a universal remote, you won't find one that gets you more for your money than the Harmony 880, www.logitech.com or

100 RUGBY 06 video game (\$49.95 for PC or \$69.95 for console) Where previous instalments of this game felt lacking, there is a real sense of evolution with the 06 edition. www.easports.com



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- Δυνρηιι BitDefender 9 Standard
- Antivirus Trial
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- Nero
- Onext
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- · Salling Clicker 3 Trial
- · Serious Magic Ovation PowerPoint Add-On Trial
- StumbleUpon
- Thunderbird 1.5
- Trillian 3.1
- Ubuntu 6.06 LTS
- . Webroot Spy Sweeper 4.5 Trial





ONE PC, TWO BRAINS

THINK THAT DUAL-CORE PCS ARE TOO PRICEY? WE LAB-TESTED FOUR ECONOMICAL DESKTOPS THAT DELIVER PLENTY OF POWER.

BY DAN SOMMER REVIEWS BY ELIAS PLASTIRAS

If you've yearned for a dual-core desktop system but have held off buying one because you were deterred by high prices, now is the time to take the plunge. The cost of ual-core processors from AMD and Intel has dropped significantly since they debuted last year, and a good selection of affordable dual-core PCs is currently available. You can shell out less than \$1500 and walk away with a robust and powerful system — including a monitor — that's ready to take on both multitasking and multithreaded applications.

With the advent of dual-core CPUs, PCs have gained more processing power than ever before. A dual-core machine has two computing cores in one processor package, which allows the system to efficiently work on more than one task at a time. Our WorldBench 5 benchmark's multitasking itset has shown us that dual-core processors prove especially useful when the computer is running two taxing programs. Dual-core processors also boost the performance of multithreaded software, though relatively few applications are written this way. (WorldBench 5 includes the multithreaded Roxio VideoWave Movie Creator and Windows Media Encoder). You can expect to see more multithreaded applications, such as multimedia programs and games, in the months to come.

However, you don't have to be a gamer or a power user to take advantage of dual-core technology, for example, everyone should be running antivirus software, and on a dual-core PC using well-behaved applications you can run a virus scan while rendering a video at the same time, without having the machine screech to a halt. You can also burn a DVD and crunch numbers in a spreadsheet, all the while enjoying plenty of speed.

To see what kind of dual-core desktop systems you can get at a value price, we picked a ceiling of \$2000 and came up with a representative set of machines that ofter a wealth of dual-core power and features to satisfy buyers looking for a bargain. The PC World Test Centre assessed four dual-core systems, three based on Intel Pentium D processors (Plus Corporation's Inspire 9300, T1 Computers' Peluxe Dual Core 3.2 and Posstar's Dual

Core Gaming D940) and one with AMD's Athlon 64 X2 3800+ CPU (Altech's Gameforce X2).

We evaluated the desktops by running them through our WorldBench 5 and gaming tests, and by appraising each system's performance, features, design and price. As these are value machines, price weighed heavily in our consideration. After our complete comparison, one PC emerged as the winner: Altech's Gameforce X2, which earned our Best Buy award thanks to its good application and games performance, loads of media-oriented features and sub-\$2000 price tase.

Good deals

Not all of the systems we looked at for this review can compete with costly, decked-out high-end models, but they do provide a great package for your money. All four PCs had at least 2006B of storage, with two offering striped RAID arrays. All had double-layer DVD burners and two had memory card readers. TI Computers' machine even had a powerful GeForce 7900GT-based graphics card. Not surprisingly, it was the top performer on our games tests.

Altech's Gameforce X2, with a 2,26Hz Athlon 64 X2 4200processor, turned in the best performance of the group, with a WorldBench 5 score of 106. That's fast, but far from the speediest system we've tested, which is also from Altech (the \$7729 Altech NRG Hydro, a machine on our Over \$3000 PCs Best Buys chart with an overclocked and water-cooled AMD Athlon 64 FX-60 CPU, scored 143).

In reviewing the test results, we noted that the Intel machines, despite their faster lock speeds, are still slower than AMD's Athlon 64 X2 chips. The two companies' dual-core processors are still quite different, though; for more information about the varying architecture, see "Duelling dual-core CPU architectures" on page 56. To give you a completely different alternative, we also examined a dual-core idea which you can read about in "Core Duo-based iMac packs lots of power" on page 60.

Altech Gameforce X2

his is the only Athlon-based dual-core REST BUYS system in the review and its raw speed was evident during testing. It recorded the highest overall score in PC WorldRench 5 and it also encoded our test MP3 files in less time than the Intel-based machines.

Altech has wisely chosen to go with an AM2 socket-based Athlon, which means that this machine will hold you in good stead in the future if you want to upgrade. The Abit KN9 SLI motherboard will let you install up to 8GB of memory via its four DDR2 slots and its second PCI Express x16 slot can be used to run two identical NVIDIA graphics cards in SLI mode.

The AM2 CPU socket and the maximum memory capacity of 8GB makes this machine the pick of the bunch if you want a long-lasting system, which should handle Windows Vista, once it's released, without any qualms, and gives you enough options to improve upon the performance that the base configuration provides.

It wasn't the best performing games PC in the review (the TI Computers entry had a faster graphics card), but its 7600GT-based graphics card is nevertheless solid and will keep up nicely when playing the latest games at the native 1280x1024 resolution of the supplied 19in Samsung 940N LCD monitor. The graphics card is an Xpertvision brand and it has 256MB of memory. Its standard cooling device is audible, but that should be of no consequence to you unless you want a silent machine.

The CPU cooler is also a stock-standard AMD kit consisting of a heat sink and fan which is fairly quiet. At the rear of the enclosure is a 12cm fan that helps extract warm air generated by the system and there is also space for an 8cm fan at the front of the case. The case has plenty of room and



Altech has done a good job with the cables, which are routed well out of the way of the airflow.

Room for hard drives and optical drives abounds: there are bays for six hard drives and four optical drives and you don't need any tools to install and remove the drives. The hard drive bays face the open side of the case, which means they can be installed and removed easily without venturing over any motherboard connections. This orientation ensures that access to the SATA ports on the motherboard is not hindered by overhanging hard drives.

Altech has installed two Samsung hard drives in this machine. in a RAID 0 configuration. The capacity of the drives is 500GB and when they are operating, they are very quiet. Our hard drive transfer test wasn't as fast as we expected it to be: after multiple test runs it only scored 18.8MBps when copying data from one location on the hard drive to another, which is a similar rate to the Plus Corporation

cont. page 59

DUFILING DUAL-CORE CPU ARCHITECTURES

A hile AMD's and Intel's current CPUs share the dual-core moniker, the two companies' deskton CPIIs are very different.

From the ground up. AMD designed its Athlon 64 X2 and FX-60 desktop processors to include two cores. Intel created its Pentium Extreme Edition and Pentium D deskton CPUs by nutting two single-core chips in one package.

Intel beat AMD to the dual-core desktop punch in April 2005 by assembling the first two-core X86 processor - the Pentium Processor Extreme Edition 840 - out of existing parts. Engineers put two 3.2GHz Pentium 4 cores on the same die (each with its own 1MB Level 2 cache), and then connected them with an external 800MHz front-side hus

To boost performance, Intel left in the Pentium 4's hyperthreading technology, which makes the operating system see each chin as two. To create the subsequent, lower-priced Pentium D processor (launched in May 2005), the company employed cores running at slower speeds and turned off the hyperthreading, In January 2006, Intel introduced undated dual-core Pentium D chins based on smaller, faster cores,

AMD rolled out its first dual-core CPUs in April 2005 under the Dateron name for servers and workstations, and then launched its Athlon 64 X2 desktop chip a month later. One of the clearest advantages of AMD's design is the ability of the two cores to communicate with each other within the die so that data doesn't have to travel over a slow external system bus as in Intel's arrangement, Each core gets a 512KB or 1MB L2 cache

Evaluating the performance of CPUs that use different chip sets is an imperfect science. But in the vast majority of our tests of PCs using comparable processors, AMD's dual-core architecture has proved to be the superior performer.

As you read this, Intel is rolling out

its new dual-core chips, called Core 2 Duo (see page 12 for more details). These chips use a new architecture, which can process more information at the same time than the previous architecture and our tests of the new chips show marked improvement over Pentium processors and also over AMD Athlon 64 X2 processors. Stay tuned to PC World for reviews of machines using the new Intel chips.

AMD released its new CPUs in May of this year. The new CPUs are an upgrade on the older ones: they feature a new socket design called AM2, which is not compatible with socket-939 motherboards and the new CPUs also add support for DDR2 memory modules up to 8DDMHz, Our tests of AMD's flagshin AM2-based CPU, the Athlon 64 FX-62 on page 21 in our July issue, showed no increase in performance over the older CPUs. Nevertheless, if you're in the market for a new AMD-based PC, you should look for one based on the AM2 socket. - Tom Mainelli

	ALTECH GAMEFORCE X2	PACSTAR DUAL CORE Gaming D940	PLUS CORPORATION Inspire 930D	TI COMPUTERS DELUXE DUAL CORE 3.2
Price	\$1999	\$1782	\$1499	\$1999
Warranty	1 year RTB	1 year RTB	3 years on-site	2 years RTB
Vendor	Altech	Pacstar	Plus Corporation	TI Computers
Phone	(02) 8831 9999	(02) 9868 6962	1800 007 587	(02) 9437 5437
URL	www.altech.com.au	www.pacstar.com.au	www.pluscorp.biz	www.ticomputers.com.au
SPECIFICATION	S			
CPU	AMD Athlon 64 X2 4200+ (2.2GHz, AM2 socket)	Intel Pentium D 940 (3.2GHz)	Intel Pentium D 930 (3GHz)	Intel Pentium D 940 (3.2GHz)
Motherboard	Abit KN9 SLI	Gigabyte GA-81945P Pro	Intel D102GGCL	Gigabyte GA-81945P Pro
Chipset	NVIDIA nForce 570 SLI	Intel 945P	ATI Express 200	Intel 945P
SLI support	Yes	No	No	No
CrossFire support	No	No	No	No
Installed RAM	1GB 0DR2 667MHz (2 x 512MB)	1GB 0DR2 667MHz (2 x 512MB)	1GB DDR2 533MHz (2 x 512MB)	1GB DDR2 533MHz (2 x 512MB)
Maximum RAM	8GB	4GB	2GB	4GB
Graphics adapter	XpertVision GeForce 7600GT	Sparkle 7600GT	Inno3D 7300GS	Leadtek PX7900GT
Graphics memory	256MB	256MB	256MB	256MB
Hard drive capacity	2 x 250GB Samsung SP2504C	1 x 320GB Seagate Barracuda 7200.10	1 x 200GB Samsung SP2004C	2 x 250GB Western Digital 2500KS
Optical drive	Samsung SH-W162Z	LG GSA-4167BBK	LG GSA-4167BBK	LG GSA-4167BBK
Case size	Mid-tower ATX	Mid-tower ATX	Mini-tower micro ATX	Mid-tower ATX
CPU cooling	Stock heat sink and fan	Stock heat sink and fan	Stock heat sink and fan	Stock heat sink and fan
Case cooling	Rear 12cm fan installed	None	None	Front 12cm fan installed
Dptical drive bays	4	4	2	4
Hard drive bays	6	7	4	6
Power supply	350W	500W	380W	400W
PCI slots	2	3	2	3
PCI Express x1 slots	2	2	1	2
SATA ports	6	4	4	4
SATA RAID options	Yes: 0, 1, 0+1, 5, JBDD	Yes: 0, 1, 5, 10	No	Yes: 0, 1, 5, 10
IDE ports	1	2	2	2
IDE RAID options	No	Yes: 0. 1	No	Yes: 0, 1
eSATA	No	No	No	No
USB 2.0 ports	9	9	6	9
FireWire	1	3	0	3
Ethernet	2 x Gigabit	1 x Gigabit	1 x 10/100	1 x Gigabit
Wi-Fi	No	No	No	No
Audio	7.1 channels; S/PDIF, analog	7.1 channels; S/PDIF, analog	7.1 channels; analog	7.1 channels; S/PDIF, analog
Front-loading ports	Yes	Yes	Yes	Yes
Dther ports	DVI; PS/2; TV-out	DVI; PS/2; TV-out; serial; parallel	DVI: PS/2: TV-out: serial: parallel	DVI; PS/2; TV-out; serial; parallel
Monitor	19in Samsung 940N LCD	19in ChiMei CMV-398D widescreen LCD	19in BenQ FP91G+ LCD	19in BenQ 91G+ LCD
Input peripherals	Microsoft Dotical Value Pack v2.0	Newmen corded mouse and keyboard	Laser keyboard and mouse	Newmen corded mouse and keyboard
Speakers	Creative SBS930	Built into monitor	Dzaki 2-speaker system	None
Other features	Memory card reader	Memory card reader	Floppy drive	Floppy drive
Dperating system	Windows XP Home	Windows XP Home	Windows XP Home	Windows XP Home
PERFORMANCE				
PC WorldBench 5 overall*	106	98	84	96
Adobe Photoshop 7.0.1**	331sec	366sec	401sec	363sec
Adobe Premiere 6.5**	348sec	452sec	509sec	446sec
Windows Media Encoder 9.0**	288sec	312sec	357sec	314sec
Multitasking **	492sec	538sec	672sec	536sec
Roxio VideoWave Movie Creator 1.5**	302sec	262sec	289sec	263sec
WinZip 8.1**	360sec	352sec	423sec	386sec
MP3 encoding**	1min 57sec	2min 17sec	2min 28sec	2min 19sec
ML2 GIICOUIIIE	18.8MBps	30MBps	18.2MBps	38.5MBps
Hard disk transfer*				
	H A N C E			
Hard disk transfer*		73fps	17fps	99fps
Hard disk transfer* G A M E S PERFORI	MANCE		17fps 5fps	
Hard disk transfer* © A M E S P E R F O R I Quake 4 without AA*	HANCE 78fps	73fps 42fps		99fps 65fps 71fps
Hard disk transfer* G. A. M. E.S. P. E. R. F. O. R. F. Quake 4 without AA* Quake 4 with 4x AA*	78fps 42fps	73fps	5fps	65fps

ney: — a mymer szone is seerer, ——a newer times is setter. Note: For MY2 encoding, we converted 53mm worth of vavy files to 192Xbps MY2s, for the hand disk transfer we copied 4,1265 of diast from one location on the hard drive to another, cluske 4 rets were undertaken at High detail settings at a resolution of 1280x1024, FEAR tests were undertaken at Maximum detail settings at a resolution of 1280x1007, ps = frames per second.



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ONE PC, TWO ERAINS

machine's single Samsung drive and a far-cry from the rates achieved by the Pacstar and TI Computers in this roundup.

As far as ease of use is concerned, the machine is let down by a poorly designed front panel, which has FireWire and USB 2.0 ports recessed too deeply in the mould of the panel and a port cover that opens upward. This makes it difficult to plug in devices, especially if the adjacent ports are already populated. The aesthetics of the front panel are also not to our liking and we wish the reset button was better defined for those times when the operating system becomes unresponsive. This button is very small and hard to press — which can also be a good thing, making it difficult to restart your system be accidentally funging it.

For connectivity, the memory card reader at the front of the case is very convenient and the amount of USB 2.0 ports available (nine, all up) should ensure that you dotSP 2.0 ports would be consumed to the machine and a second can be added through an internal motherboart connection.

Those of you looking to make use of older peripherals will be aghast at the lack of serial and parallel ports and will have to find USB adapters for them. Indeed, the rear port cluster of the machine is somewhat bare because of a lack of legacy ports, although it does have PSZ ports for accommodating input peripherals. Dual Gigabit Ethernet ports are also provided so that you can connect one to your broadband connection and another to a high-speed local area network.

One of the latest mod-cons not featured on this machine is eSATA, which is an external Serial ATA port for a hard drive. This type of port can be found in machines with a slightly higher price point.

VERDICT The price point, the performance, the build quality and the available upgrade avenues, make this a worthy machine for anyone who wants to do video editing or play some games in addition to everyday tasks. If you want faster graphics in the future, you can always add a second 7600T-based card or a more powerful single-card solution. It gets our Best Buy award.

Pacstar Dual Core Gaming D940

acstar's dual-core entry has the distinction of being the fastest of the three Intel-based machines that we reviewed and we think it's a fantastic proposition for anyone who wants a fast PC for under \$1800.

It was neck-and-neck with the TI Computers entry in most of the benchmarks, which is hardly surprising considering both machines have the same type of motherboard and CPU, plus the same amount of RAM. While the TI has the faster graphics card, the slightly faster non-game benchmarks of the Pacstar (see the table on page 57) can be attributed to slightly faster memory modules (667MHz as opposed to 533MHz) and also to the Seagate hard drive. Seagate drives have proven to be very fast in our stand-alone tests of the maker's latest 720.0.10 models and the single 320GB model in this machine was no different, scoring 30MBps in our file transfer test. This is only 8.5MBps slower than the TI machine, which features two Western Digital drives in a RAID 0 array.

In the graphics department, the Pacstar's Sparkle GeForce 7600GT graphics card performed as well as expected, making the machine suitable for playing the latest games up to a resolution of 1280x1024. However, this machine ships with a 19in Childei widescreen display, which has a resolution of 1440x900. Its width is suitable for aligning documents side-by. the best resolution for playing games and some games may not look right.

While the machine has a glut of USB 2.0 and FireWire ports,

While the machine has a glut of USB 2.0 and FireWire ports, its Gigabyte 8I945P Pro motherboard is well in tune with the past and it offers PS/2, serial and parallel ports that can be used to plug in old printers or any odd devices, such as programmable electronics equioment that require serial ports.

On the inside, the board features two IDE ports, which is great if you have any older hard drives that you wish to install. Most of the new motherboards seem to be foreging a second IDE port, which means if you want to use an IDE hard drive it has to share the same ribbon cable as the optical drive, which can degrade the performance of the IDE drive.

Pacstar has assembled the machine in an ATX mid-tower case that has plenty of real estate for hard drives (up to seven) and optical drives (up to four), but the hard drive by faces the rear of the case, which can make the installation and removal of drives adverd as you need to dodge motherboard ports and cables. Speaking of cables, Pacstar has folded and tidied up power and ribbon cables in a way that is not pretty, but keeps them out of the way of the CPU fan and away from the hard drive. We do wish that a fan at the front or at the rear was

present to help move air through the case, and a fan should be considered, especially if you choose to install more components in the future.

As the motherboard is based on the 945P chipset, it does not support the latest Core 2 Duc CPUs, which should be on everyone's wish list this year, so Pentium D CPUs will be the primary future upgrade path for this machine. The four DDR2 memory slots support up to 40B of RAM (half the supported capacity of the Aftech) and expansion cards can be installed in the three available PCI slots and in the two available PCI slots and in the two available PCI express x1 slots, although one of these slots resides very close to the graphics card.

Aesthetically, the front panel of this machine is a little more tolerable than Altech's one, with its front-loading ports much easier to use and a reset button. The door on the top optical drive bay hides an LG DVD burner, which, unlike the other machines we tested, did have



some trouble reading double-layer media. This is an anomaly as this machine uses the same LG drive as the TI Computers and Plus Corporation machines.

VERDICT This machine has plenty of connectivity options and a decent case for future expansion. It performed well in our tests and we think it's a good machine, but perhaps not the best value in this group. For only \$100 more, the Altech will give you higher application performance and more hard drive space, while the TI machine will give you a better high-end games performance and more hard drive space.

Plus Corporation Inspire 930D

f all the machines we tested, this one was the neatest looking one and also the most interesting proposition in terms of physical layout and value for money.

If you're looking for a dual core machine under the magical \$1500 mark, then this one will satisfy, but you will have to forego more powerful graphics capabilities, a faster CPU clock speed and a higher hard drive capacity. The Inspire 930D comes with a Pentium D 930, which is a slower speed than the other two Intel-based machines reviewed here, Also, its GeForce 7300GT graphics card is no match against the power of the 7600GT and 7900GT-based cards in the more expensive Altech, Pacstar and TI machines. Its hard drive capacity, at 200GB, is also the smallest in the review and it lacks Gigabit Ethernet.

However, it was a reliable performer in all our tests and it's adequate for everyday office tasks and mainstream home tasks (such as basic photo and music editing, using office applications and surfing the Internet).

Its components reside in a micro-ATX case and its Intel

D102GGCI motherboard, which relies on the ATI Express 200 chipset instead of an Intel chipset, is also of the micro-ATX form factor. Being a micro means that its dimensions are shorter than a regular ATX board so it doesn't have as many PCI and PCI Express slots as the other machines in this review.

The position of the motherboard in the case is also unusual. Usually, the motherboard in a micro-ATX (and a mid-tower ATX) case is mounted to the right, inside the case (looking at it from the front), but in this machine the motherboard is mounted to the left side. This means that it is upside down. The CPU is located on the bottom and the expansion slots reside near the top of the case. There appear to be no advantages to this design in terms of cooling (no case fans are installed), although one could argue that the CPU will be residing in cooler air at the bottom of the case and not be subjected to rising heat from the graphics card.

The sole 200GB Samsung hard drive in this machine is located at the bottom-front of the case in a drive cage that can house up to two drives. It performed well for a single drive, scoring

CORE DUO-BASED IMAC PACKS LOTS OF POWER

ual-core technology isn't exclusive to PCs - Apple has gotten in on the action, too. The company introduced dualcore technology on the iMac last February. And with the addition of Intel processors and Boot Camp for running Windows, it's now possible for us to see how Macs compare with Windows-based PCs through benchmarking. To determine what kind of power an iMac can provide, we examined the 20in widescreen model, an all-in-one system that's among the most elegant computers you can buy.

When you gaze at the iMac's gorgeous screen, all the other hardware seems like an afterthought because all the components are neatly tucked away behind the LCD. The list price for the model we tested, with 1GB of RAM, is \$2754 which is more expensive than the PCs we looked at for this feature. but Apple also offers a 15in unit that starts at \$1999

The iMac uses a 2GHz Core Duo T2500 nrocessor. Intel's mobile dual-core CPU. which enables this thin system to run cool. It earned a score of 96 in our WorldBench 5 tests, making it fast for a value system. The iMac also completed our multitasking tests quickly, ahead of the value PCs that we reviewed for this roundup.

The system offers solid 3-D graphics, thanks to its ATI Radeon X1600 card with 128MB of RAM, but one drawback is that Macs running Boot Camp conflict with the 3DS Max portion of our WorldBench 5 tests. and as a result the iMac was unable to complete the games portion of our testing. The wide-aspect display looks terrific at its native 1680x1050 resolution, and the system can support external monitors at up to 1920x1200 (digital) or 2045x1536 (analog).

Using Apple's Boot Camp, we added a second partition to the iMac to house Windows XP. To run Windows you just hold the "Option" key while booting. The two nartitions appear as icons, and you can take your pick. At first, Windows looks slightly different because the standard icons, such as My Computer and Recycle Bin, are absent. Bnce you're working with it, however, Windows behaves normally, with none of the noticeable delays from the bad old days of emulation.

LOADS OF FEATURES

The iMac comes with a slot-fed double-layer DVD burner located on the right of the LCD, as well as a 250GB hard drive. On the right rear are most of the ports you'll want: two FireWire, three USB 2.0 (plus two more USB



1.1 ports on the keyboard), mini-BVI, BVI, VGA, S-Video and composite video, Goodsounding stereo speakers are built in, as is a microphone, optical digital audio (for headnhones) and an audio line-in port.

One of the iMac's advantages is the software it includes, such as iLife, Apple's media-focused set of applications. Another nifty feature is iSight, the built-in Web camera with its iChatAV software already installed.

This system has some limitations unlike the PCs we looked at for this review. the iMac does not allow you to access its interior to upgrade and add components. However, it does put most of what you need from a computer into one extremely elegant package. - Dan Sommer



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18.2MBps in our file transfer tests, which is not far off from what the Altech achieved with a two-drive RAID configuration.

For connectivity, the machine has six USB 2.0 ports and PS/2, serial and parallel ports, but it lacks FireWire, which is required if you want to connect a DV camcorder or an older-style [Port It's one of two machines in the review to come with a

floppy drive (the TI is the other), which really has no use except for loading RAID drivers during a Windows installation, and this machine does not even have RAID capabilities. We think Plus Corporation should have installed a memory card reader instead. Even in a business environment, a memory card reader can be a great time saver for getting sanges off a digital camera.

We do like the front panel though, as well as the small size of the case, which makes it perfect for an office environment. The front-loading ports are easy to use, and well located if the machine is to be situated on a desk and a reset button is present for those awkward times when Windows starts to act like a deer caucht in headlights.

Plus Corporation supplies the machine with a 19in BenQ. FP91G+ LCD monitor and some basic speakers. Perhaps the best aspect of the Inspire is its 3-year on-site warranty, which is great value considering the low price tag of the machine and good piece of mind if voulve a home or small business user.

VERDICT It may not be as powerful as the other machines that we steated, but its simple configuration is piently for everyday tasks and its small stature will appeal to those of you who don't want a large case and who have no desire to expand it in the future.

TI Computers Deluxe Dual Core 3.2

The name says it all, really, it's a dual core machine that runs at 3.2GHz and its powerful graphics card and plentiful hard drive space make it a deluxe model. At \$1999, it's the only machine worth considering if you are a gamer, due to its GeForce 7900GT-based graphics card, which scored much higher frame rates in our games tests than the 7600GT-based Aftech and Pacstar machines at a resolution of 1280x1024.

It was also the fastest machine in our hard drive transfer tests, where it scored 38.5MBps. This score is due to its RAID O configuration, which consists of two 2500B Western Digital hard drives. The drives are located in a sturdy mid-tower ATX case, which has room for three more hard drives and three more optical drives. The hard drive cage faces the rear of the case, making installation and removal more difficult compared to the Altech machine.

We do love the fact that TI has installed a 12cm fan at the front of case. This fan blows cool air over both the hard drives, and helps to circulate air through the case. For the CPU, TI has used Intel's stock-standard heat sink and fan for cooling, and another small fan resides on the 945P chipset. Despite the presence of these three fans (and the one in the power supply and on the graphics card), the machine is not louder than the other machines that we tested, but it's no doubt kept much cooler.

Its performance results in PC WorldBench 5 and our MP3 encoding test were two per cent slower than the Pacstar machine's results, but this is not significant. The results were so similar because they both use the Gigabyte 81945P Pro motherboard, Intel Pentium D 940 CPU and 1GB of DDR2 RAM. However, the Pacstar does have slightly faster RAM.

Other similarities between this system and Pacstar include the LG DVD burner and the Newmen keyboard and mouse combination. The Ti is differentiated by the aforementioned RAID O hard drive configuration, its 19in BenQ LCD monitor and its fairly tame midtower case. The front panel has concealed front-loading USB 2.0 and FireWire ports that are easy to use and it has a reset button.

Like the Plus Corporation machine, it lacks a memory card reader,

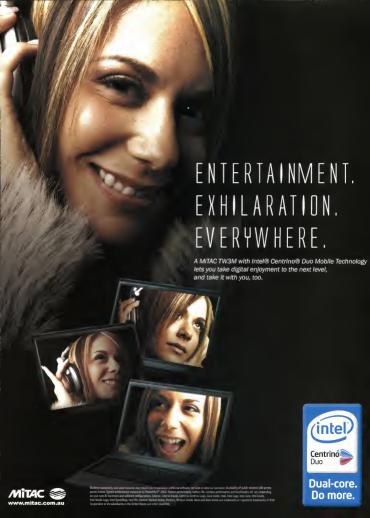


but instead includes a floppy drive. The floppy drive in this instance is a convenience as the machine has a RAID array, When installing Windows XP on a RAID array, a floppy drive is essential in order to load the necessary RAID drivers for the motherboard. Windows XP only looks for these drivers on a floppy diskette. Nevertheless, a memory card reader would be a great convenience, too, but if you want to add one, you will have to use one of the optical drive ports or remove the floppy drive. While an optical drive bay door is present, IT has not used it to conceal the LG DVD burner.

Like the Pacstar machine, it has plenty of ports, including PS/2, serial and parallel, and it also has two IDE ports so you can make use of older IDE hard drives. It has the same amount of USB 2.0 and FireWire ports, as well as SATA ports, but no support for eSATA.

VEADICT Overall, this machine is compelling because of its faster graphics card and the 500GB of storage space. If you don't mind being stuck with a Pentium D upgrade path (the mother-board will not accept Core 2 Duo processors), and if you're an avid payer of the latest computer game, it's definitely worth your hard-earned cash. If you want a platform with better upgrade options, go with the Altech instead.

62 AUSTRALIAN PC WORLD SEPTEMBER 2006









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Best case. Scenario

TO BUILD A PC YOU NEED TO START WITH THE BASICS: SOMETHING TO HOUSE IT. TO HELP YOU CHOOSE THE BEST ONE FOR YOUR SYSTEM, WE LAB-TESTED SIX CASES WITH A RANGE OF FEATURES, AS WELL AS HOME THEATRE OPTIONS. BY ELIAS PLASTIRAS

ot all cases are created equal. Variances in build quality, expansion, features and cooling methods means prices can range from under \$100 with a power supply to over \$500 without one!

The differences between an expensive case and a cheap one may not be immediately clear. Both may have the same amount of drive bays for expansion and both may have front-loading ports. However, the more expensive one could be made out of lighter material and have a better layout for installing components. It may also have a more efficient cooling system and perhaps a quieter one, too.

The key to buying a case is to analyse your needs. If you will be building a powerful configuration (running SLI graphics and more than two hard drives) and will constantly be adding and removing bits, then a case that has a roomy layout, a sturdy frame without sharp edges, plenty of cooling options and lots of room for expansion is a must.

Look for one with a removable motherboard tray, as this will let you work on the motherboard while it's on its mounting, yet outside the restrictive space of the case. Likewise, to keep your

components as clean as possible, look for a case that has filters on its intake fans which will trap any airborne dust particles in your environment.

Don't worry too much about tool-less claims. Screws are still the best way to hold your components in place and most of the time a tool-less case requires a screwdriver to mount rails or a bracket to the hard drive and optical drive, anyway.

If you only want a case in which to build a basic to moderate configuration (one graphics card, one optical drive and up to two hard drives at most) that you will "set and forget", then a cheaper case will suit your needs. Cheaper cases are usually good deals as they come with a basic, preinstalled power supply, too.

In this roundup we looked at six ATX tower-style cases ranging in price from \$129 for a basic case with a power supply, up to \$499 for a case without a power supply, but with advanced cooling and noise muffling capabilities. For those of you who want to build a media centre PC, we also looked at two home theatre style cases that are more convenient to slot into your inving room than a tower.

Antec NSK6500

If you don't have the funds to buy a case and a separate power supply, this case from Antec is an interesting proposition. It comes with a 430W power supply and is made out of steel, so it's quite sturdy. However, it's also a fairly cramped case. The



URL: www.altech.com.au 3.5in drive bays: 5 5.25in bays: 4

For cooling, the case has space for two

8cm fans at the front and it comes with a multi-speed 12cm fan mounted at the rear

Aesthetically, the case looks good and it has conveniently placed USB 2.0, FireWire and audio ports located in a line under the power and reset buttons.

VERDICT All up, a solid case and power supply combination that has enough space for a basic to moderate PC configuration. It's a little cramped, but as long as you install your drives first. you shouldn't have any problems.

Cooler Master Praetorian PAC-T01

C WOT 6 Cooler Master's Praetorian case is a magnificent REST BUYS piece of engineering that can be bought at a reasonable price without a power supply. The PAC-T01 is our favoured model because of its plain front panel, but newer versions of the Praetorian (7-series) have doors on the front panel that hide the drive bays and also have side panel vents and top-loading ports.

Internally, the Praetorian has plenty of space for hard drives and optical drives and it comes with plenty of fans. Indeed, the Praetorian comes with two 8cm fans at the front of the case. which do a good job of keeping the hard drives cool, while another

8cm fan is located on the ceiling of the case. and vet another 8cm one at the rear of the case for extracting warm air.

Price: \$176 Distributor: Australia IT URL: www.autraliait.com.au 3.5in drive bays: 6 5.25in drive bays: 4

The polished ATX mid-tower chassis is made out of thick aluminium alloy and is extremely sturdy. There are no sharp edges to be found and despite the hard drive bays not facing towards the side of the case (they face the rear) the case is very easy to work on. This is due to its removable motherboard and expansion card tray, which slides out from the rear. The removable tray is handy

for undertaking CPU upgrades without working in a cramped environment. Likewise, it makes it easier to install PCI cards that are situated near the bottom of the case. Once upgrades are complete, the tray slides smoothly back into the case and doesn't require too much effort or "jiggling".

The case's front-loading ports for USB 2.0, FireWire and audio devices are concealed behind a hinged door and are easy to use. A metal filter on the front of the case does a good job of catching dust, but if you have the black version of the case, it will require regular brushing in order to keep it looking good.

VERDICT For the price, this case is unbeatable. It's solidly constructed, has plenty of room for expansion, is easy to work on and looks good to boot. It's our Best Buy.

Lian-Li PC-101

This is a mid-tower ATX case that has been designed with cooling efficiency in mind. Its design is "upside down" compared to regular ATX cases, with side access to the inside of the case via the right side instead of the left (looking at the case from the front).

The right panel comes off to expose a standard array of 5.25in drive bays, but that's where similarities with other midtower ATX cases end.

The motherboard's base has the expansion cards located near the top of the tower and the CPU towards the bottom. A large rear intake fan, with the help of an adjustable air-partition, blows air directly onto the CPU to keep it cool and there is a space between the motherboard segment, the hard drives and the power supply.

This separation gives the four hard drive bays their own airflow via a front-mounted. filtered fan (which draws air from vents on the side of the front nanel's door), while the power supply, which is located at the rear of the case in the same segment as the hard drives, extracts this air from the case.

Price: \$379 Distributor: Anyware URL: www.anyware.com.au 3.5in drive bays: 5 5.25in drive bays: 5

The drive bays face the side of the case and have preinstalled rails. To mount a hard drive you must first attach four special screws to the drive, which will then allow it to slide into place. We found this method of mounting to be very simple, secure and convenient.

An access hole is present for routing

drive and power cables through to the motherboard segment of the case. This is the hardest part of the installation as all power cables need to be threaded through the hole. Any unused power cables from the power supply need to be strewn alongside the hard drives or routed into an empty drive bay.

As for building it up, the case does not have a removable motherboard tray so mounting it requires that both the rear fans be removed first. A side-mounted fan directly over the expansion cards removes warm air generated by the expansion cards.

As for the build quality of the case, its aluminium construction is very sturdy and all its edges are rounded.

A locking door hides an attractive fascia, while the thick side panels are held in place by a sliding rail and a thumbscrew. The top of the case has USB 2.0. FireWire and audio ports



SEPTEMBER 2006

(these are easily accessible when the case is situated on the floor, but could be prone to dust), while the bottom has sturdy footholds similar to ones found on hi-fi equipment.

VERDICT We like the layout of this case and its efficient cooling design. It has plenty of space for drives, but we wish the mother-board tray was removable and all the ar intakes had filters. In saying that, we had no qualms building up the case during testing. It's a little expensive, but well worth considering if you want to soluree.

Lian-Li PC-S80

This is among the most expensive cases in this feature, but there is a lot to it. It's billed as Lian-Li's "silent" case and it carries that label because of its design.

The drive and motherboard components reside behind two layers of aluminium, which act as an insulator. This means that noise from the system fans and the drives does not escape easily. Dampening material is also installed on the ceiling of the case, at the front and on the portion of the side panel that sits near the expansion cards. No matter how many layers Lian-Li uses, however, the roar of an ATI Radeox NJSOOXTX in full flight cannot be muffled.

The silent aspirations of this case do not stiffe its cooling capabilities. This case has no fewer than three 12cm case fars installed (two at the front and one at the rear) and one 8cm case fan, and each hard drive bay has a heat sink enclosure that attaches to the hard drive using special mounting screws. These screws allow the drive to easily side in this the side-facing drive bay rails.

The rear of the case is as fascinating as the inside. It has a large plastic shroud that hooks on to the case near the power supply and the rear exhaust fans, and its job is to muffle the sound that

It fans, and its job is to muffle the sound that is emitted from this area as well as to divide the air coming in (to cool the CPU) and leaving

Unfortunately, the case is a little cramped and is not the easiest one to work on. It lacks a removable motherboard tray so you must work on the motherboard while it is mounted on the chassis. The drive bays reside very close

Price: \$499 Distributor: Anyware URL: www.anyware.com.au 3.5in drive bays: 5 5.25in drive bays: 4

the case (via the power supply).

to the motherboard and leave little room for manoeuvring, especially if you are attaching cables near the edge of the motherboard. Once everything is installed and the case is closed, the system runs very quietly, apart from when the aforementioned graphics card's fan is running at full speed. We do wonder how

the front case fans receive cool air to blow over the hard drives, as there aren't any vents near the front of the case. There are vents on the rear of the side panel that may be the facilitator of external air for these fans.

VERDICT The dual layers of sheet metal do well to keep the system quiet, but the lack of a removable motherboard tray, the resulting tight working environment and the high price, detract from this case as a worthwhile proposition.

Thermaltake Eureka VC8000SWA

Its big and conspicuous design is over the top and unnecessary,

HOME THEATRE CASES

If building a home theatre-style PC is more your thing, a tower-style case is probably not what you're after. Antee and Zahman are among the companies that have cases in the more traditional hi-fi form factor so that your PC can be easily slotted into a wall unit with the rest of your home theatre gear.

Essentially, Zalman's NDISO case is a full-size case that makes no compromises when it comes to the PC technology it can house. You don't have to buy a special motherboard or power supply to populate it — It uses standard ATX components — and it has comfortable cooling options that allow you to install a powerful PU and multiple hard drives (up to four). Because it can house a full-size ATX motherboard, the HDISO can provide you with up to seven expansion slots, perfect for installing dual-digital TV tuners, a WFF. is card and anythine gles you may have in mind.

Antec's Fusion is slightly more restrictive: it will house a micro-ATX motherboard, which only offers up to four expansion slots and it will hold two hard divers instead of four. The drives have soft mounting points, which absorb any vibrations made by the drives. Two 12cm fans extract warm air from the case and these have three speed settings.

Both the Zalman and the Antec cases have a large volume knob and a display screen. The Zalman also has an infrared receiver in its panel and comes with a remote which the Antec lacks.

You do pay for these features as these cases are relatively costly. Zalman's unit is priced at \$499, while Antec's will set you back \$365. Despite the cost, we like the Zalman case for its size and built-in infrared receiver. Both are distributed by Altech (www.altech.com.au).

but the Eureka VC8000SWA has plenty of redeeming features for those of you who want a voluminous case.

There is plenty of depth from the front to the rear of the case, and the hard drive bays face towards the side of the case, making them easy to install and remove (all drives reside on rails, which are supplied with the case).

Like the Praetorian, this case also has a removable tray, but its implementation is awkward. Instead of the tray being removable towards the rear along with the expansion cards, it has to be slid forward to an unicoked position and then lifted out of the chassis (this can be difficult as the tray does not slide smoothly). The graphics card and any other expansion cards need to be removed before the tray can be lifted. Includentally, all expansion cards are ledd in place by a common bracket, rather than individual screws, which is convenient if you want to remove a lot of cards in one hit, but it requires a bit of fiddling to put back on, especially if you have multiple cards, and if you are adding cards while the system is standing upright. The only purpose of the removable tray is to allow you to remove the motherboard to install a new CPU without having to remove it completely from its base, saving you the extra effort of having to unscrew and fer-mount it.

The full-size ATX chassis is constructed out of aluminium and is relatively sturdy. It comes with two 12cm fans and a vented side panel to keep your components cool. The intake fan at the front of the case is filtered to trap any dust that comes its way, but because of the large (and heavy) door on the front of the case (it is designed to look like a speaker enclosure, for some reason) it will be sucking air from a vent at the bottom of the case. The size of the case means that a floor position is required, but if you have carpet, this will suck up a lot of dust. A wooden base for the case to sit on should be considered.

We don't like the side-mounted USB 2.0. FireWire and

audio ports on this case, but given the large door they can't reside on the front. However, Thermaltake should have perhans considered sitting them at the top of the unit similar to the Lian-Li cases.

VERDICT This case has a few flaws and is probably much bigger than it needs to be (the door is to blame). It tries hard to make things

Price: \$349 Vendor: Thermaltake URL: www.thermaltake.com.au 3.5in drive bays: 7 5.25in drive bays: 5

easy by providing rails for all drives, a removable tray for the motherboard and a single bracket for all expansion cards, but ultimately it's a fiddly case to work on. It has plenty of space on the inside, comes with a power supply, and

has mounting facilities for a liquid cooler.

Thermaltake Matrix VD200BNS

This mid-tower ATX case comes with a 430W power supply for its relatively low price. It's a basic case with sturdy construction compared to other cases in its price category and is worth considering if you want to build a PC with a basic - to moderately powerful configuration.

Its drive bays face the rear of the case (not the side), which can make the installation and removal of drives inconvenient. and the plastic fasteners used to hold the drives in their bays are not always reassuring.

They use tension to keep the drive secure from one side only. Although they seem to work well, in some of our tests we didn't get the position of the fastener correct and it came loose. We would have much preferred good old fashioned screws.

This theme of tool-less mounting extends to the expansion brackets. Cards are held in place by plastic clips but because they are hinged to open upward, they can make the installation of expansion cards awkward as the mounting bracket of the card has to squeeze under the clips.

There are no extravagances with this case: it doesn't come with a removable motherboard tray or any special fan shrouds or noise reduction, but it does have a rear-mounted exhaust fan

and the front panel is almost entirely made up of metal mesh that helps with ventilation However, this mesh design could make your case unsightly if you plan to put it in an area that has a high concentration of dust.

Price: \$129 Vendor: Thermaltake URL: www.thermaltake.com.au 3.5in drive havs: 6 5.25in drive havs: 4

Like Thermaltake's Eureka case, this one has USB 2.0. FireWire and audio ports located inconveniently on the side instead of on the front panel.

VERDICT While we think the "tool-less" mounts are a bad idea, this case is adequate if you are looking for an inexpensive case and power supply combination.



PC World and Thermaltake have 2 fantastic products to give away

Eureka Home Server The Eureka full-tower case boasts an allaluminium body, making it extremely light weight. The internal structure of the Eureka has been cultivated for maximum efficiency and easy installation of all types of motherboards. The honeycomb see-through side window provides the case with a stylish look and allows for maximum airflow

over the CPU and VGA card as does the 120mm silent front and rear fans. The Eureka comes complete with a 430W Thermaltake silent power supply.

boasts a lightweight chassis and comes complete with a 430W Thermaltake silent power supply. An entirely filtered mesh front panel design prevents dust build up. Tool-free installation for all drive bays and addon cards makes the Matrix easy to use. The 120mm rear fan allows for maximum ventilation while the lockable side



For your chance to win either of these great products, simply write your name, address and answer to the following question on the back of an envelope, and mail to Thermaltake Competition, IDG Communications Pty Ltd, Reply Paid 295, St Leonards NSW 1590 by 2 August, 2006 or e-mail to thermaltakecomp@idg.com.au.

Question: In 35 words or less, tell us why you need a Thermaltake PC case for your computer.



companies and agencies. The promoter is ING Communications Ptv Ltd. 88 Christie Street, St Leonards, NSW, 2065, ABN 1400

592 650. To enter, entrants must submit their name and address, and is a series, extrain lines again; men in the first objects, on it is assert the following question. "Tell us in 35 words or less why you need a Thermatitake PC case for your computer 5. The competition commences at 9am on 2 August 2005, and closes at 5pm on 28 August 2006. All Tlam on 2 September

cook, the pages was traced with a processing and original response to the question asked. Chance plays no part in determining the warner.

6 The judges' decision in relation to any aspect of the competition is final and binding on each person who erfors.

3. Prizes will be sent within 28 days from the draw date unless

10. The total prize pool value is \$438 and consists of one (1) Thermalitake Euroka Home Server and (1) Thermalitake 11 Entries remain the property of the promoter and cannot be returned.

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We/come to California, the land of beaches, hollywood and beautiful computer cases. Artec's world headquarters, senior management and design team are all right here, in the heart of California's Silicon OHAIP, The place where digital dreams unran and allery the place where digital dreams unran to place. We'd like to think that gives us a unique perspective that finds its way into all of our products and is why Artec stands out from the components crowd with market leading designs. Like Roelfs, our environmentally frendry power supply line or our path breaking QuietComputing" cases, such as the world famous Sonata. So whether you want a computer that's totally gnarly or one that will list still four. Artec is the world.





Cheap notebook tweaks; maximise your notebook

f pink is the new black, and 50 is the new 40 (and I really hope it is), are notebooks the new desktops? I'd have to say yes. With the right ugrades, enhancements and accessories, many notebook PCs match their desk-bound counterparts all the way down the line. These tips will help you get more use out of your notebook, no matter how new or old.

UPGRADE WITH CARE: Support techs report that the most troublesome notebook components are the hard drive, screen and keyboard. While you probably won't want to replace an expensive notebook screen, anyone with the right tools and even a slight mechanical inclination can replace the hard drive, keyboard and other components, with some capient tinkerina.

Opening your notebook case may void the warranty, so if your system is still under warranty, let the manufacturer deal with repairs. Notebooks are delicate, so never force anything, Vinco Dougherty, who has repaired countless notebooks, says the most common mistake is using the wrong-size screwdriver. One slip and your motherboard is runied.

Before doing anything else, remove the notebook's battery and disconnect its power cord. Remember to ground yourself before you open the case with a grounding strap (the safest way and preferred method).

REPLACE YOUR HARD DRIVE: Adding a new hard drive to a notebook is usually easier than doing the same thing on a desktop PC: you just remove a few screws from the bottom of the case, slide or lift the hard drive assembly out of the system, and swap a new

BY KIRK STEERS

SEPTEMBER 2006 AUSTRALIAN PC WORLD 71

drive into the assembly (always handle drives by the edges).

Most notebook PCs use a standard 2.5in hard drive, but ultralights and other diminutive systems may use a smaller 1.8in drive. Drives also come in different heights; the most common are 12.5 millimetres and 9.5 millimetres, Check your notebook's documentation or visit the vendor's Web site to determine the drive size compatible with your machine.

A 2.5in, 100GB drive costs less than \$250. You can also get great deals at online stores and third-party sellers. Check with your notebook wendor to find out whether you need a SATA or parallel ATA model. Buy only from vendors that offer a money-back guarantee — any reliable seller will provide one lasting at least 30 days.

BOOST YOUR RAM: Most notebooks come with only one or two memory sockets, which may leave no open slots for upgrades. Adding memory may require that you discard at least one existing memory module. The RAM on most notebooks resides behind a removable panel. The modules slip into a slot and are secured at the ends by clips or retainers. Crucial offers an excellent tutorial on installing laptop RAM; you can view it at www.crucial.com/install/Radium.asab.

Crucial and Kingston (www.kingston.com) will tell you the type of RAM your notebook needs. The high-quality modules they sell are well worth the small, additional expense over noname RAM

CHANGE YOUR KEYBOARD: Installing a new keyboard usually required isassembling the notebook's case, but in other respects it is is straightforward: first snap the old keyboard out, and then snap the replacement keyboard in. Appropriate replacement keyboards may be available only from the notebook's vendor.

GADGETS TO GC

For every desktop peripheral, a miniaturised notebook version is available from Belkin (www.belkin.com.au), Kensington (www.kensington.com), Targus (www.targus.com), or a similar vendor. Here is my list of on-the-road notebook essentials.

LOSE YOUR TOUCHPAD: When I'm in serious work mode, my notebook's touch pad just isn't as easy for me to use as a mouse. A miniature USB travel mouse with retractable cord costs around \$60 from these and other vendors, and a wireless



FIGURE 1: Protect your notebook PC on the road with APC's \$50 SurgeArrest Notebook.



FIGURE 2: Windows XP'S dual view joins your notebook's LCD with an external monitor.

version (Bluetooth or infrared) costs a bit more. I recommend a wired mouse for busy travellers; there are no batteries to worry about, and no tiny Bluetooth or RF transmitter to lose.

GET MORE PORTS. If your notebook has only one or two USB ports, a small four-port USB hub is essential for connecting more devices. Portable printers, scanners and other power-hungry USB peripherals may need a self-powered hub like Belkin's \$65 4-Port Travel Hub (www.belkin.com.au). To connect a mouse, keyboard or thumb drive, a non-powered USB hub will suffice. And for power protection on the road, typ APC's \$50 Surgayersets Notebook device (www.apc.com/au; see FIGURE 1).

UNLEASH YOUR ROUTER: A small wireless router lets you move around a hotel room, an office, or anywhere else with a fixed, high-speed Internet connection. The \$98 AirPlus G DWL-G730AP Wireless Pocket Router from D-Link (www.dlink.com.au) fits in a tiny carrying case.

CLOSE THE GATE: Anyone hopping from one hotel room or wireless hotspot will need some kind of security strategy. Check with your IT department to see if you can install a personal firewall on your notebook. Some USB drives like those from Sandisk (www.sandisk.com), Lexar (www.lexar.com) and Kingston (www.kingston.com) have built-in security features including biometric barriers like fingerprint scanners to unlock files and tools to encrynt files or folders.

TURN ON YOUR NIGHT LIGHT. Using a notebook computer in a darkened airliner or other light-challenged space can be difficult because you can't see the keyboard (unless it is backlit). Instead of squinting by the light of the notebook's LCD, try Kensington's \$32 Flyight (www.kensington.com). The device has an LED light at one end of its bendable neck and a USB connector at the other. The Flylight is small and light enough to take anywhere, and it can illuminate a notebook work area without bothering others. BLOCK ROVING EYES: On lengthy, boring Flights, few seatmates can resist sneaking a glance or two at your notebook screen. 3^{MS}

Notebook Privacy Computer Filter (www.3m.com/intl/au/office) slides over your notebook's screen, and easy-to-attach clips hold it in place to prevent the snoop sitting next to you from linxing your game of Solitaire. The screen is pricey, around \$120 for a 14in model, but it will keep your affairs private,

DDCK AND CDVER: A docking station lets you connect a monitor. keyboard, mouse, speakers, USB devices and network link to your notebook in just seconds. Most notebook vendors offer custom docking stations for some models, but these tend to cost hundreds of dollars, Targus's \$350 Universal Notebook Docking Station with Video links to any notebook via USB 2.0. The only catch: a USB 2.0 link can't match the speed of a direct VGA monitor connection, so it may create a bandwidth bottleneck when running fast-moving games or other graphics-intensive applications

SHARE YOUR PERIPHERALS: If you constantly switch between your desktop and notebook PCs, use a keyboard-video-mouse switch to run either PC from one keyboard, monitor and mouse. Many vendors sell KVM switches that require lots of cables and connections, but Kavoom KVM (www.kavoom.biz) is a software "switch" that runs over a network link. A simple click lets you toggle between computers. The program costs \$US30 for two PCs, and another \$US10 for each additional PC.

DOUBLE YOUR VIEWING PLEASURE: Windows XP's Dual View lets you combine an external monitor with the machine's own LCD. to spread your open windows across both displays. To determine whether your notebook supports Dual View, connect a monitor to the system, right-click the desktop, select Properties to open the Display Properties dialogue box, and choose Settings.

If Dual View is supported, the "Extend my Windows desktop onto this monitor" option will be available (not greyed out), and two screens labelled "1" and "2" will appear above the checkhox (see FIGURE 2). Check the box, click OK and drag screen 1 above.



FIGURE 3: Triple your screen space with Maxtor's TripleHead2Go threedisplay switch.

below, to the right or to the left of screen 2. Visit www.microsoft. com/windowsxp/using/setup/learnmore/northrup_multimon.mspx to read more about XP's Dual View.

IF TWO MONITORS ARE GOOD... You can expand your laptop's viewing area across three monitors with the \$550 TripleHead2Go

EXTEND YOUR NOTEBOOK'S LIFE

These tips and products will keep your notebook going and going.

GET A GRIP: Keep your notebook in hand by placing strips of 3M Safety Walk tape on its case, A small roll costs about \$12.

CDME IN FROM THE COLD: When you bring your notebook in from the chilly outdoors, don't start it until it reaches room temperature. Otherwise, condensation could wreak havoc on its circuits.

BEAT THE HEAT: Placing your notebook on a blanket or other soft surface, or running it inside its carrying case stifles ventilation and makes it overheat faster, Instead. put a pencil or similar object under the back edge to elevate your notebook; even a couple of centimetres of space lets hot air flow away from the case. For serious overheating, pick up a notebook cooling pad such as Antec's \$59 Notebook Cooler (www.antec.com; shown below).

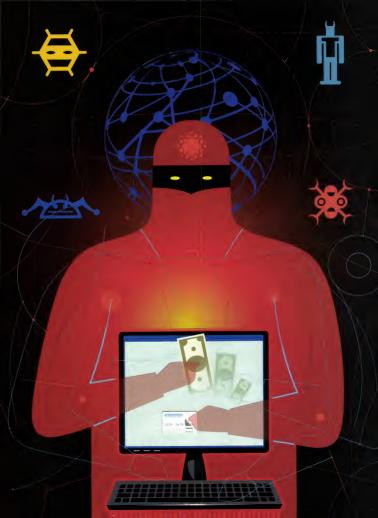
STAY ORY OR FRY: To protect your notebook from liquid spills, use a plastic keyboard cover. It just might save you the cost of a new notebook.



Cool your notebook and improve its circulation with Antec's Notebook Cooler.

SAVE YOUR SCREEN: Lowering the screen puts most notebooks into standby or hibernation mode when they're running on batteries, but doing so might not put them in power-saving mode when they're plugged into AC power. Check the Power Options settings in Windows' Display Properties to make sure that you're conserving power: right-click the desktop, select Properties-Screen Saver-Power, and set a duration under "System standby" and "System hibernates".

from Matrox (www.matrox.com/graphics/offhome/dh2go/home.cfm: see FIGURE 3). The palm-size device connects your notebook's graphics port to expand the image across three monitors. The company's \$330 DualHead2Go (www.matrox.com/graphics/ offhome/dh2go/home.cfm) supports two monitors, but gamers in particular will appreciate having their centre point in the middle of the middle monitor rather than between two displays. The devices work only with certain ATI and NVIDIA chip sets. so check the compatibility list at www.matrox.com/graphics/ offhome/support/th2go/compatibility.cfm before buying. Also, few notebooks ship with the graphics horsepower required to drive three monitors at full resolution (not many desktop PCs can do so either), so make sure your system can push images to three different displays.



Ilustrations by Steven Lyons

biggest securityrisks

YOU DON'T KNOW ABOUT

Hackers, scammers and identity thieves are constantly coming up with new ways to attack your PC and your privacy. Here are the newest perils — and how to foil them. By Andrew Brandt

always patch my system and run regular scans with updated antivirus and antispyware scanners. But while researching this story, I got hit by a Trojan horse (Trojan.Winloginhook.Delf.A) that was too new for my antivirus program to catch. Whether it's a new variant on a familiar foe, like a Trojan horse, or a completely new type of attack, today's threats can leave even the most security conscious among its willnerable.

There are ways we can minimise our risk, however. The first step in mounting a good defence is to know what's coming at you, so I've compiled a list of 10 serious security problems that you need to be aware of. To protect yourself, you should of course know how to keep your PC patched and your antimalware tools current. In addition, I'll provide tips to help you avoid these new dangers, and to contain the damage if you do get hit.

70MBIE PC ARMIES SET TO ATTACK

DANGER LEVEL: HIGH LIKELIHOOD: HIGH TARGET: WINDOWS USERS

Bothes were once the province of technically adopt criminals who used these remote-controlled armies of infected PCs to send spam, launch Internet attacks or spread spyware, but now even unsophisticated cyberthugs can generate their own bothet and target your PC, thanks to savier miscreants who create and sell simple tools for that purpose.

Many people have made a business out of building and selling self-contained but development kits that let potential herders called) direct their own scam. The kits, which cost anywhere from \$30 to \$4000, permit aspiriciminals to create full-featured bothets and other malicious software, ranging from customisable worms to keyloggers — no techie chops required. "There are tons of kits]—fifty, skity, a hundred different ones."

says Eric Sites, vice president for research and development at Sunbelt Software, a maker of antispyware programs.

Clever Web controls

It gets worse. After building a new bot and sending it out to unsuspecting computer users, the wannabe hacker can use sophisticated command-and-control tools to direct the resulting network easily.

Sites' team at Sunbelt, along with the Rapid Response Team at security firm iDefense Labs, has found a new Web-based bothet control they've dubbed Metaphisher. Instead of issuing text commands, herders can use the control's highly graphical user interface, complete with well-designed custom icons and intuitive controls. Point, click, hack.

According to iDefense Labs, Metaphisher-controlled bots have infected more than a million PCs worldwide. The command suite even encrypts communications between itself and the bot herder, and relays information about virtually every aspect of infected PCs to the botmaster — including their exegraphic location, the

DEFENCES

A word unknown sites and don't click links in unsolicited e-mail. Like most maharar, host tend to be distributed in these ways.

Remain suspicious of e-mail attachments, even when a message seems to come from somebody you know. Crooks love to use genuine e-mail addresses in "spoorted" virus-laden e-mail missives.

Consider an atternate

hroweer such as Firefox or

Opera. IE has been a favourite

hacker target.

- Windows security patches installed, and the browsers other than Internet Explorer loaded on each PC.
- All these easy-to-use kits and controls undoubtedly contribute to the huge numbers of bet-infected PCs that law enforcement of the bet-infected PCs that law enforcement officials have uncovered during excent criminal investigations. For example, Jeanson James Ancheta, a 21-year-old American man, we recently sentenced to 57 months in prison after pleading guilty to violating the US Computer Fraud and Abuse Act. He had been running a lucrative criminal enterprise based on a bother with as many as 400,000 infected systems. And three bot herders arrested in the Netherlands last year are thought to have controlled a staggering 1.5 million zomble PCs.

The low barrier to entry means that even as law enforcement catches some herders, eager

newcomers join their ranks every day. "It's amazing how many people get into running botnets just because they see someone else doing it and making money," says Joe Stewart, a senior security researcher at Lurho, a provider of managed security services.



Think about switching to an alternative to IE, like FireFox (left) or Opera.





With no programming

skills, the criminal uses his kit to build a new bot not yet known to antivirus makers. The criminal sends his new bot out as an e-mail attachment or plants it on malicious Web sites.





The resultant botnet rakes in cash with spam, spyware and denial-of-service attacks.

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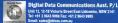








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YOUR STOLEN DATA FREE ON THE WEB

DANGER LEVEL: HIGH LIKELIHOOD: MEDIUM

TARGET: WINDOWS USERS

It's had enough when one crook uses a keylogger to steal your bank log-in and passwords. It's much, much worse to have all of your sensitive information sitting in an unprotected FTP site, open to anyone who hannons across it

Unfortunately, that is exactly what security researchers have started seeing over the past year.

Alex Eckelberry of antispyware firm Sunbelt Software showed me one such FTP server that his company had found while investigating a keylogger that wasn't even particularly widespread. The server, hased in Washington in the US, was packed

with nearly a gigabyte of credentials stolen during the month of April.

Not only do keyloggers capture anything you type, they can take screenshots of your PC's display, and they can glean data from the Windows Protected Storage area, which is the place where Internet Explorer stores its saved passwords.

One of the log files on the FTP server held pilfered passwords for a number of US banks and for Buy.com, along with Yahoo,



DEFENCES

- 1 Use a firewall that can block unknown programs from communicating with the Net to keep keyloggers from phoning home. The free ZoneAlarm firewall can do this: the built-in Windows XP firewall can't
- Cycle passwords, and don't use the same name and password at multiple sites.

Hotmail and other e-mail account user names and passwords, plus account details for online casinos and a host of other sites. The danger is international; the log records were in myriad languages - German, Spanish, Hungarian, Turkish and Japanese, among others - and it held IP addresses that pointed to infected computers scattered around the world.

When his company discovered the first cache of keylogger data more than a year ago. Eckelberry says he alerted the banks and companies whose credentials had been scavenged by the logger.

Tim Brown, owner of Kingdom Sewing & Vacuum, was one recipient of such a call from Sunbelt. He figures that his bank log-in was lifted by a keylogger when he was on a trip to Costa Rica and used a hotel computer to check his account. But his home computers weren't safe, either: "I didn't have any antivirus or spam blockers on my computers," he says. "I do now."

Brown was relatively lucky: he was notified before anyone had used his stolen data, and he immediately changed his account information to protect himself.

Thousands of other potential victims may not be that fortunate. And these days. Sunbelt is uncovering so many data vaults that it can't handle the sheer volume of stolen credentials, so it has stopped contacting individuals and simply reports what it finds to the authorities.



Firewalls. like ZoneAlarm. can prevent keyloggers sending vour private data to hackers.

With this much data available, there has been no rush to create new keyloggers, says Sunbelt's Eric Sites. According to the Anti-Phishing Working Group, a business and law enforcement association, there were 180 unique keylogger programs in April, far more than the 77 found in April of last year but a slight drop from the three months prior.

Sites concludes that the maturing malware business is focusing its attention on efficiently processing its cornucopia of stolen information. "The collection and sorting and manipulation of keylogger data [are] getting dropped into SQL databases," he says, "Then [the criminals] can churn through the data to find what they're looking for. Those back-end systems are incredibly complex."

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PHISHERS CO-OPT LEGITIMATE SITES

DANGER LEVEL: HIGH

LIKELIHOOD: HIGH

TARGET: ALL INTERNET USERS

Phishing is one of the most lucrative computer crimes, and it continues to grow rapidly. In April 2006, the number of unique new phishing sites spiked to a record 11,121, almost four times the 2854 sites found in April 2005, according to the most recent report from the Anti-Phishing Working Group.

You might expect phishers' fake sites to be easy to recognise by their amateurish spelling mistakes or broken Web graphics. But these days few phishers try to re-create entire bank-site pages by hand. Instead, modern scammers operate sophisticated sever-side software that pulls all of the text, graphics and links directly from the target bank's live site. All of the queries you inpose to the real site — except your log-in data. That choice information goes straight to the bad guys.

Some phishing sites have become so smooth that they can even trap cautious and experienced Web surfers. In their "Why Phishing Works" study published in April, experts at UC Berkeley and Harvard in the US presented

test subjects with Web sites and had them look for the fakes. As it turned out, "even in the best-case scenario, when users expect spoofs to be present and are motivated to discover them, many users cannot distinguish a legitimate Web site from a spoofed Web site," the report states. "In our study, the best phishing site was able to fool more than 90 per cent of articipants."

Browser redirects below the radar

The key for the phisher is to inveigle you into visiting the bogus site. You may be well conditioned not to trust an e-mail missive purporting to be from your bank and asking you to click a link to check your account details. But phishers today are adopting

DEFENCES

- Don't trust an unsolicited e-mail message from any company, no matter how good it looks. The best phishing sites and scam e-mail messages lack obvious flaws.
- Type in your bank's URL yourself or use a bookmark; avoid clicking an e-mail link.
- 3 Look for a padlock icon, which indicates a secure site, in the browser's toolbar, not the Web page.
- Use one of the many available antiphishing toolbars that can warn you when you encounter a known phishing site. Netcraft (http://toolbar.netcraft.com) offers one popular free toolbar.



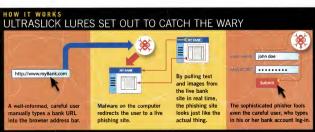
Toolbars, like this one from Netcraft, can warn you of a phishing site.

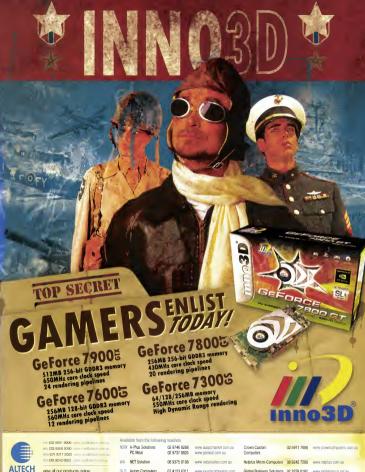
more forceful means to push your browser to their sites.

A malware-enabled technique called smart redirection secretly sends your browser to the scammer's Web site even if you manually type your bank's correct Web address into the browser. Malware on your machine monitors the availability of dozens or hundreds of duplicate fake bank sites, hosted

on computers around the world, and redirects your browser to an available fake site whenever you attempt to reach your bank. And if authorities subsequently close down one site, the smart redirection software on an infected system simply sends the victim to a destination site that has eluded shutdown.

As long as there's money to be made, criminals will continue to hone their phisting skills and to develop new techniques. And there's plenty of money to be made. "Good, credentialed credit card information sells for \$95 a card," says Michael Rothschild of security hardware maker CounterStorm. The phishers can even sell your data twice. "They can sell the credit that's left on the card, and they can sell the identity," he says.











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THE HUMAN SECURITY HOLE

DANGER LEVEL: HIGH LIKELIHOOD: HIGH TARGET: A

You can update Windows and each of your applications, you can also use security software to protect your PC, but one constantly exploited weakness can never be patched: human fallibility.

Online villains use an ever-changing array of tricks and traps to lure you in, and they're getting sneakier.

A recent eBay auction trap highlights the effectiveness of good social engineering. According to reports from US-CERT and Internet security companies, clever phishers were using a vulnerability in the eBay site to add auction links to eBay's pages. Those links brought unsuspecting users to a new site that would ask them for their eBay log-ins. You're no doubt suspicious of random e-mail messages that prompt you to click a link and enter your account information. But if you are prompted after clicking a link on a verifiable eBay page, you just might get caught with your guard down.

Your e-mail gets equal attention. Clever crooks steal or by e-mail addresses, not to pelt you with spam, but to send out virus-laden messages that appear to originate from a genuine address — without ever infecting the supposed sender. Combined with a list of known e-mail addresses at a particular company, these spoofed e-mail messages allow for carefully crafted and targeted attacks that are far more successful than the net-cast-wide approach used to distribute most malware today. You're likelier to click on a Word document or an e-mail link that appears in a well-worded note from somebody Wourcompany.com.

Spoofed e-mail addresses are also useful



in conjunction with such attacks as the recent one that took advantage of a new, zero-day exploit in Microsoft Word. To get hit, all you'd have to do is open a .doc attachment — and why wouldn't you open an e-mail from John down the hall?

Criminals know that if they can fool you with an e-mail or top-notch phishing site, they're well on their way to owning your computer. But there's a positive flip side: a well-informed user constitutes the best defence against any Internet attack. Stay educated, and stay safe.

DEFENCES

I Subscribe to securityfocused RSS feeds to keep abreast of the latest Internet threats. We recommend the feeds at F-Secure (www. f-secure.com/weblog), Kaspersky (www.viruslist.com/ en/feeds) and Sophos (www. sophos.com)

Obtain a wealth of security product reviews and tips at www.pcworld.idg.com.au.



Keep up to date with the latest threats with online resources like Kaspersky's Viruslist.

CROOKS REDIRECT YOUR BROWSER TO THEIR SCAM WEB SITES

DANGER LEVEL: HIGH LIKELIHOOD: HIGH TARGET: BUSINESSES

Odds are, you use Domain Name System servers every day. They translate human-friendly names like "www.pcworld. idg.com.au" into the numerical IP addresses that computers use to find each other on the Internet. Your ISP has its own DNS server, as do most companies. The Internet can't get by without them.

But more than a million DNS servers around the world — up to 75

per cent of all servers, according to networking firm The Measurement Factory — run old or misconfigured DNS software. Such systems are subject to a wide enough range of serious attacks that the SANS Institute, a computer security research and education organisation, itsis DNS software as one of the top 20 Internet vulnerabilities. For example, it was widely reported that cybercrooks used misconfigured DNS servers in lettla dienial-of-service attacks that forced antispam firm Blue Security to shut its doors permanently in May.

DEFENCES

Ask your company's IT group to make sure your DNS server is not recursive and its software is up-to-date. For more, see the US-CERT report at www.us-cert. gov/reading_room/DNS-recursion121605.pdf.

Attacks work in several ways. One tactic is "cache poisoning", where an offender can simultaneaously target everyone who uses the DNS server. A successful attack tricks a company's or ISP's server into sending everyone who uses it to a phishing or other malicious site. You might type "www.americanexpress.com.au" or "www.yahoo.com.au", but you will end up at a Web site that installs an arsenal of malware on dup at a Web site that installs an arsenal of malware on

your computer.

Another lethal ploy: when bad guys send spoofed requests to DNS servers that are recursive, the servers respond by sending answer messages to the intended victim. The responses contain more data than the original requests, which thus magnifies the tatck beyond what the crooks could send themselves. The hapless victim is completely overwhelmed by garbage data and can't respond to genuine requests from regular insers.

82 AUSTRALIAN PC WORLD SEPTEMBER 2006

ROOTKITS AND VIRUSES PARTNER UP

DANGER LEVEL: HIGH

LIKELIHOOD: MEDIUM

TARGET: WINDOWS USERS

Rookits are a malware inventor's dream; they allow worms, bots and other malevedent software to hide in plan sight. The files don't show up in Windows Explorer, the running processes don't display in the Task Manager, and many current antivirus programs can't find rookith-hidden malware — which is precisely why malware writers increasingly use them to hide malicinus and

When news broke last November that some sory music CDs installed rootkit software to hide copy-protection flies, gleeful online crooks were quick to follow with malware that exploited Sonly's creation to hide their own programs. Sonly's software masked any files or running processes that began with "\$\sys\$\s^{1}\$, so the opportunistic malware writers changed their file names accordinely.

In March, Spain-based antivirus maker Panda Software reported finding variants of the virulent Bagle worm equipped with rootkit functionality. Worse, like producers of botnet programs, rootkit software makers sell tools or give away free ones, so it's even easier for malware authors to build rootkit functionality directly into long-standing software strains like Bagle, or into brand-new mallicious creations.



Specialised software, like RootkitRevealer, scan Window's File System for evidence of Rootkit activity.

DEFENCES

free downloads

- Look for antivirus software
 that provides rootkit
 scanning and removal.
 Kaspersky's and F-Secure's
 latest applications have it now;
 others will likely add it soon.
 Use a rootkit detector
 such as Sysintemals'
 RootkitRevealer (www.
 sysintemals.com/Utilities/
 RootkitRevealer, thml) and
 F-Secure's Blacklight (www.
 f-Secures com/Jakcklight), both
- Even as opportunistic criminals use existing roofstix, chilling new possibilities for the software are emerging. For example, security firm e-gle discovered it was possible for crooks to hide files in the boot sector of the hard drive. And in January, John Heasmasseurity consultant for Next-Generation Security Software, announced that roofstix could hide malicious code within a PC's BIOS by using functions in the BIOS's Advanced Configuration and Power Interface feature.
- A project run by Microsoft and University of Michigan researchers really blew the lid off rootkit research, devising a method to virtually "jack up" the operating system and then use software called SubVirt to run it from below. As far as the operating system knew, it was running normally. but the "virtual machine" completely

controlled everything the OS saw and could easily hide itself.

Fortunately, the technique can't be implemented easily, and it tends to offer the user clues, causing a slower-running system and producing certain tell-tale modified files. For now, this extreme kind of rootkit exists only as a proof-of-concept; it should be a long time before malware authors can launch such attacks.

High-stakes hide-and-seek

Simply finding today's relatively less dangerous rootkits is a serious challenge for security software. The art of detection and removal is part engineering, part voodoo and always difficult.

Detecting a rootkit on a Windows PC is not unlike shining a flashlight at objects in a darkened room, and then trying to identify each object by the shadow it casts on the wall. Specialised software, such as F-Secure's BlackLight and Sysinternals' RootkitRevealer, scans the Windows file system and memory for characteristic irregularities that rootkits leave behind.

But those tools may not work in every case. Recently, the adware program Look2Me effectively broke BlackLight by disabling a key system call. The discovery was accidental, but rootkit makers will undoubtedly pay attention to it in their next round of malware.



SEPTEMBER 2006 AUSTRALIAN PC WORLD | 83

VIRUSES CALL UP YOUR MOBILE PHONE

DANGER LEVEL: MEDIUM LIKELIHOOD: MEDIUM TO LOW TARGET: MOBILE PHONE AND SMARTPHONE USERS

s if viruses on your PC weren't had enough, these Anastv programs now target your mobile phone. Like their computer-based cousins, some mobile viruses wreak havoc by crashing the phone and wrecking its operating system. Others are mere nuisances that change icons and make the device more difficult to use.

And of course, some are strictly money-minded. A Trojan horse currently infecting Russian phones sends text messages to services that charge the sender a fee.

So far these pests aren't a major problem in Australia, but they are significant threats in Europe and Asia. And a lot of experts think it's just a matter of time before the money-grubbing aggravations arrive on our phones.



Russian malware masquerades as a mobile phone browser but runs up SMS fees.

Like many realworld biological agents. a mobile phone virus typically needs to be physically close to another susceptible phone to make the leap. Computer security experts like Mikko Hyppoenen, chief research officer for Finnish antivirus firm F-Secure, often use unsecured phones as hait to see what slithers in. On one London trip. Hyppoenen's phone got hit four times via Bluetooth, which has a

maximum range of about DEFENCES 9 metres. Bluetooth is the most common

- but not the only

- vector of infection

The Mabir virus, for

example, spreads via

mobile viruses hit phones

using the Symbian

operating system, but

a few go after Windows

Mobile- and Java-based

The vast majority of

SMS messages.

Disable "open" Bluetooth on your phone or PDA to close down the most common infection route Keep a close eye on

the itemised part of your mobile phone bill for unexpected charges. Use a mobile antivirus program, F-Secure. Kaspersky, McAfee and Trend Micro all offer them.

in June 2004, the number of viruses has continued to climb. There were 211 variants as of May 15, 2006, up from 156 at

phones. Following the discovery of Cabir.A the end of 2005.

MAI WARE OVER THE AIR

DANGER LEVEL: MEDIUM LIKELIHOOD: LOW TARGET: CONSUMERS

ould a pack of razor blades or even your pet cat carry a computer virus? It may seem farfetched, but recent findings from a trio of Dutch researchers serve to demonstrate

the possibility. RFID (Radio-Frequency Identification) chins are small, inexpensive devices that can be embedded in stickers and in pet microchips. They're used for electronically

transmitting information - say, inventory data for shipping pallets - over short distances. Some countries, like the US, also plan to add RFID to passports and drivers' licences.

Though highly useful, some implementations of the RFID technology have security weaknesses. For example, the information on some tags can be rewritten, and other tags can be read from

In an attempt to exploit some of these weaknesses, the

DEFENCES

1 RFID signals can't pass through metal or foil-lined cases. If you carry an RFID security pass, keep it in a metal business-card holder or similar enclosure.

Dutch university researchers conducted a controversial proof-of-concept study using modified RFID tags and a virus-like command to "infect" the back-end database that stored the tag's records. Theoretically, an RFID system could thus be made to crash or run malicious code - a scary prospect for a critical business or government technology.

Numerous computer security experts have pointed out that a reasonably well-built system with effective

"middleware" between the RFID reader and the database probably wouldn't be vulnerable to such an assault. And sensitive RFID chips can use encryption and shielding covers to protect against acquiring an unasked-for malicious payload.

Still, the study illustrates a basic point: nearly every system has exploitable flaws. Keep an eye on your cat.

an unusually great distance.

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YOUR DATA HELD FOR RANSOM

DANGER LEVEL: MEDILIM LIKELIHOOD: LOW TARGET: WINDOWS LISERS

It sounds like a plot concocted by Austin Powers' nemesis. Dr. Evil: get onto your victims' computers, kidnap their files and hold the data hostage until they pay up. But such attacks, though rare, have occurred all over the world

Cryzin, one early example of ransomware. searches for 44 different file types (such as Microsoft Word or Excel files) on a hard drive, and compresses them into a passwordprotected zip file. It then tells the victim to deposit \$US300 in one of 99 randomly selected e-gold accounts. Once paid off, the criminals provide the victim with the necessary password.

In May another ransomware application. named Arhiveus, came to light. Rather than directing payment to a potentially traceable e-gold account, it instructed victims to buy prescription drugs from a specific online pharmacy and then send the order ID to the malware author as proof of payment.

"It looks like a Russian-based pharmacy that they're hosting in China," says Lurhg's Joe Stewart. "Appended to [the URL] is what looks like an affiliate ID - they probably get a cut." In his



Arhiveus's curt extortion message.

DEFENCES

- 1 If you're a victim, go to the police. Don't pay the ransom, and don't visit any links in the ransom note.
- Write down the details from any ransom notes or messages, and turn off the infected PC. From an uninfected PC, run a Web search using details from the ransom note. You may be able to find the password online.
- Try using an undelete program (see the Cover DVD for some free options) to recover your files. However. some files may not be recoverable at all.

examination of both Cryzin and Arhiveus. Stewart found the necessary passwords to "free" the data embedded within the malware code itself, unencrypted.

Savvy users sometimes get lucky, too. Richmond Mathewson, a software developer from Ploydiy, Bulgaria, managed to rescue most of a friend's data after she found the entire contents of her "My Documents" folder had vanished, taking with it all her work files, which she hadn't backed up. When he looked at the computer, Mathewson found the simple but chilling Arhiveus ransom note. He saved the day with his networked Mac Mini. a free undelete tool and about four hours' labour. But he says the recovery wasn't complete: "To date, five per cent of the files are still unrecovered "

Currently, ransomware isn't very sophisticated, and its scope is limited. Besides including the password with the

program. Arhiveus dumps all the victim's files into one long file called "EncryptedFiles.als" - but doesn't actually encrypt it.

"The threat is very small to the average user at the moment." says Stewart. "I'd estimate [the number of ransomware infections] to be in the low thousands worldwide ... It doesn't serve these guys' interests to become widespread. If they keep it low-key, and target people who are powerless to do something about it, they're more likely to get paid."

But "this seems to be just the initial phase of the threat," Stewart adds. Like every type of attack, ransomware will evolve as criminals hone their approach, "With Arhiveus testing the waters of mixing ransomware with affiliate product purchases in shady online stores, it could be the start of something higger."



NO SAFE HAVEN: THREATS PLAGUE ALL PLATFORMS

DANGER LEVEL: HIGH LIKELIHOOD: LOW TARGET: WINDOWS, MAC AND LINUX USERS

ac and Linux users have been understandably complacent as Windows users suffer a seemingly endless series of attacks that exploit hole after hole in Microsoft's operating system. But these alternative OSes - once considered safe computing havens - increasingly must cope with their own problems.

The Mac is under attack as evildoers aim at the 70-odd reported security holes in OS X. One of these vulnerabilities was exploited in February by the first piece of malware to hit OS X Tiger: the so-called Oompa-loompa instant-messaging worm. And while Internet Explorer users are probably well accustomed to hearing reports of new browser bugs that could allow "remote code execution" (read: giving an attacker control of your PC). Mac users now need to beware as well - the most recent of Apple's three major security patches this year closed one such hole in the Safari browser.

Linux has a case of worms, too: the number of malicious programs targeting that OS doubled between 2004 and 2005. Rootkits, the looming threat for Windows PCs, actually trace back to attacks meant to take surrentitious control of the administrative "root" user on Unix OSes. Also, while being able to run your own personal Web server is part of the open-source draw, doing so can allow crooks to bijack your site or take control of your PC.

THREAT TALLY OS HOLES ABOUND

The number of security advisories issued for the OSes below show Microsoft is not alone when it comes to vulnerabilities, but Apple seems to patch more promptly.

Operating system	2004	2005	2006 ¹
Windows XP Home	28	37	6
(and remain unfixed)2	5	8	1
Windows XP Pro	29	45	10
(and remain unfixed) ²	5	9	1
Windows 2000 Pro	24	37	5
(and remain unfixed) ²	2	5	1
Linux (2.6.x kernel)	30	33	23
(and remain unfixed) ²	9	4	2
Mac OS X ³	15	22	7

Footnotes: 1. Through May 22, 2006, 2. Problems for which no partial fix or complete patch was available as of May 22, 2006. 3. All reported vulnerabilities have been fixed or natched Source: Securia com



The latest twist is cross-platform malware: single programs that can assault two or more types of systems

A proof-of-concept virus that attacks both Windows and Linux appeared in April, The virus, created by antivirus firm Kaspersky, contains no payload and does no damage. Known variously as Virus Linux Ri a and also Virus.Win32.Bi.a. it infects just a single type

> Norton AntiVirus

of Linux file format (ELF) and a single type of Windows file format (PE). And it's based on old Linux elements that aren't

part of newer systems. Still, it was enough of a wake-up call to prompt Linux creator Linus Torvalds to write a fix.

Windows' ubiquitousness means that malware targeting its many security holes has the greatest chance to infect the most PCs. But as alternative operating systems grow in popularity, they become more attractive targets, too. ■

Even Mac and Linux users need antivirus protection these days.

DEFENCES

1 Consider using a Mac or Linux antivirus program. such as Panda Antivirus for Linux and Mac products from vendors such as McAfee and Symantec. If nothing else, you'll be a good neighbour and help stem the flow of Windows viruses. Whatever your OS, keep

it fully up-to-date and natched

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OP HARDWARE REVIEWED AND RATED

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Double the fun

ual core is all the rage this month as Intel has finally released CPUs that not only hold a candle against AMDs latest offerings, but in fact surpass them in all of our benchmarks. The new chips - Core 2 Duo - make use of an improved microarchitecture to deliver better performance than their Pentium 4 and Pentium D predecessors and the cheapest model in the range starts at around \$340

The new CPUs have forced AMD to drop pricing on its line of dual-core CPUs. Turn to page 55 for reviews of some of the latest systems under \$2000 to feature dual-core technology.

If you're looking to build yourself a new computer from scratch, a good case is essential. We reviewed six different ATX mid-towers ranging in price from \$129 to \$499 and we witnessed varying degrees of quality and features that were sometimes not commensurate

to the product's price tag. Find out which cases we liked on page 66.

Turning our attention to the Best Buys, two new PCs make the grade on page 90 thanks to their great performance and value for money-Altech's updated Gameforce Commander and PacStar's AMD Gaming No.1.

Our updated mid-range graphics card table makes its debut on page 97. Find out which card we think is best value for money and easily compare the performance and software bundles of the ten best value cards on the market.

As usual, check our DVD for reviews of all the products in the Best Buys tables not featured in the magazine and visit www.pcworld.idg.com.au for more news and reviews.



The Best Buy charts rank and rate the hottest gear every month. If you are looking for the latest Best Buy and Recommended products then look no further than our Test Centre reviews. Chart placing is based on a calculation of features and performance compared to price.

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Products with a PC World
RECOMMENDS
Recommends are contenders for the Best Buy crown. Almost as good, they offer great value, quality and performance.

Each month the PC World Test Centre comparatively reviews over eight hardware catagories in our Best Buy charts. We also feature hardware reviews in our cover feature, as well as numerous other hardware and software products in our First Looks section. All products are thoroughly examined and evaluated in our labs for their features, costs, performance, ease of use and warranty/support.

All PCs and notebooks are benchmarked for popular and demanding productivity applications using PC WorldBench 5, while graphics performance is measured with 3DMark 2006. Notehooks that are not powerful enough to run 3DMark 2006 are instead tested with 3DMark 2001 SE (build 330).

Real-world tests are run to gauge the processing and hard drive performance of all machines. We find out how long it takes each machine to encode 53 minutes worth of wave files to 192Khns MP3 files using Codex. We also find out how fast each machine's hard drive can copy data by transferring 4GB of data from one location on the hard drive to another.

PC WorldBench 5 runs 15 of the most popular office and design applications in 13 different scenarios. It runs a timed workload for each of those individual applications, as well as a multitasking test, which is perfect for gauging the capabilities of dual-core machines. An overall WorldBench 5 score is included in the charts, and a higher score is better.

3DMark 2006 runs a series of graphics and CPU tests designed to test the overall graphics processing capability of a PC or notebook. The tests rely on the latest version of DirectX 9.0c, and runs through a series of Shader Model 2.0. Shader Model 3.0 and high dynamic range (HDR) tests

an 2001 SE runs tests based on DirectX 8.1. We test with default settings at a resolution of 1024x768 and the overall score from these benchmarks are included in the Best Buys charts. The higher the score the better.

Quake 4 and F.E.A.R. are two of the current games we use to test the

gaming capabilities of PCs, notebooks and graphics cards. Quake 4 is run at a resolution of 1280x1024 in high quality graphics mode with 2x anti-aliasing (AA) enabled, unless otherwise specified, F.E.A.R. is run at a resolution of 1280x960 in maximum quality graphics mode with 2x AA unless otherwise specified.

Battery life for notebooks is tested using MobileMark2002 in addition to a worse case scenario. MobileMark tests the notebook's battery life by running a series of productivity applications. In the worse case scenario we loop a DVD until the notebook runs out of puff.

Pricing for all products is provided to PC World in writing from the vendors on a monthly basis and is recommended retail pricing (including GST), not street pricing. Pricing and product availability is effective from the time the magazine hits the newsstand.



\$1500-\$3000 FEATURES AND SPECIFICATIONS

PERFORMANCE / COMMENTS



Altech Gameforce Commander Price: \$2899 Phone: (02) 8831 9999 IIRI - www altech com au Warranty: 1 year RTB NEW - Full review see page 24

AMD Athlon X2 3800+ CPU (Socket 939): ULi M1695 chioset 2GB DDR400 RAM: 2 x GeForce 7600GT graphics cards: SLI: 4 x 80GB Seagate SATA II hard drives: RAID 0: Samsung SH-W1627 DVD hurner: 19in Samsung 940N LCD monitor: 8 x USB 2 0: 1 x FireWire: 2 x eSATA: Gigabit Ethernet: 6 x 3.5in and 4 x 5.25in drive bays; Creative SBS580 speakers; Microsoft Basic keyboard and mouse. Windows XP Home

5558 -> 3DMark 2006

won't hurn a hole in your wallet.

It's well priced and well configured.

3087 →

It doesn't use the latest AM2 socket, but its performance is impressive



Pacstar AMO Gaming No.1 Price \$2499 Phone: (02) 9868 6962 URI - www.pacstarcomputer.com.au Warranty: 1 year parts, 2 years NEW - Full review see page 24

AMD 64 Dual Core 4200 + CPU (Socket 939); nForce 4 SLI chinset- GeForce 7900GT (256MB): 1GB DDR400 (2 x 512MB) Corsair RAM; 19in widescreen ChiMei CMV 938D monitor (1440x900); 2 x 300MB Seagate SATA II 7200rpm HDD; LG GSA-H10ABB SuperMulti DVD-RW (dual-layer): 6 x USB 2.0: 1 x FireWire: 3 x 5.25in. 4 x 3.5in drive bays: Gigabit Ethernet: VGA+DVI output: SPDIF in/out: 8CH audio: Windows XP Home

5161 at



Infocom FPS4200 Price: \$2950 Phone: (02) 9279 4272 IIRI - www.infocom.com.au Warranty: 2 years RTB

lahour

AMD Athles 64 Y2 4200+ CRU NVIDIA peored SLI chipset, 2 x 256MB XFX GeForce 7600GT graphics adapters, SLI, 19in Samsung LCD monitor, 300GB Seagate hard drive, 1GB DDR RAM, DVD burner, integrated sound, 10 x USB 2.0 ports. 1 x FireWire, Gigabit Ethernet, 4 x 5.25in and 6 x 3.5in drive bays, Logitech Media keyboard and G5 Laser mouse. Windows XP Home

5901 → A great all-round package for multimedia tasks and gaming.

This machine should handle all the latest games with ease and



Altech Sputnik BTX Deluxe Price-\$1990 Phone: (02) 8831 9999 IRI - www.altech.com.au Warranty: 1 year RTB Full review see Cover DVD

Intel Pentium 4 630 CPU, Intel 945 chipset, GeForce 6600GT graphics adapter 1GB RAM, 2 x 250GB SATA hard drives, DVD burner, 17in LCD monitor, 6 x USB 2.0 ports, 2 x FireWire, Gigabit Ethernet, 4 x 3.5in drives, 2 x 5.25in drives corded Microsoft keyboard and mouse Windows YP Home

E 1419 If you don't mind the RTX case, this machine will give you plenty of space for your files, and is powerful enough to let you play a few games.



Plus Corporation Aspect 3500 Price: \$2199 Phone: 1800 007 587 URL: www.pluscorp.biz Warranty: 3 years on-site ull review see Cover DVD

AMD Athlon 64 3500+ CPU, NVIDIA nForce 4 SLI chipset 256MB GeForce 7800GT graphics card, 19in BenQ FP91G LCD monitor, 200GB Seagate hard drive, 1GB RAM, DVD burner integrated sound, 8 x USB ports, 1 x FireWire, 2 x Gigabit Ethernet, mid-tower case, 4 x 5.25in and 7 x 3 5in drive bays, speakers, cordless Logitech keyboard and mouse, Windows XP Pro

A great graphics card and plenty of grunt make this machine a must-have for anyone looking for a fast machine at a reasonable price.

OVER \$3000 Altech NRG Hydro Price: \$7729 Phone: (02) 8831 9999 IIPI - www altech com au Warranty: 1 year RTB Full review see Cover DVD FEATURES AND SPECIFICATIONS Watercooled AMD Athlon 64 FX-60 dual-core CPU, NVIDIA nForce4 SLI chipset, 2 x water-cooled 512MB GeForce 7800GTX graphics cards, SLI, 19in Samsung LCD monitor, 4 x 80GB Samsung hard drives, RAID 0, 2GB RAM, DVD burner. Creative Sound Blaster X-Fi Fatal 1ty sound card, 6 x USB 2.0 ports. 1 x FireWire port. 2 x Gigabit Ethernet ports. 2 x cold cathode lights, 4 x 5,25in and 6 x 3,5in drive bays, cordless Microsoft mouse and keyboard, Windows XP Pro

PERFORMANCE / COMMENTS

5394 →

-) 4438

8802 -> 3DMark 2006

137 →

BEST BUYS

Plus Corporation Altera FX-60 Illtra Price: \$5199 Phone: 1800 007 587 URL: www.pluscorp.biz Warranty: 3 years on-site

AMD Athlon FX-60 CPU. NVIDIA nForce 4 SLI chipset. 512MR MSI GeForce 7800GTX graphics card, 19in BenQ FP91GX LCD monitor, 2 x 150GB WD Raptor hard disks, 2GB DDR RAM, DVD burner, 8 x USB 2.0, 1 x FireWire, 2 x Gigabit Ethernet, eSATA, 600W power supply, Full-tower case, 4 x 5.25in and 6 x 3.5in drive bays, Logitech G15 keyboard,

You might require a personal loan in order to purchase this cutting edge machine, but high performance demands a high price. This machine is currently the fastest we have ever seen.



Plus Corporation Atlas AM2 4000 Prino, \$3300 Phone: 1800 007 587 URL: www.pluscorp.biz Warranty: 3 years on-site NEW - Full review see page 24

Logitech G7 mouse, Logitech X-530 speakers, XP Pro AMD Athlon 64 X2 4400+ (AM2 socket): NVIDIA nForce 590 SLI chipset: 2GB DDR2 667MHz RAM: 256MB Leadtek

This is one of the best performing PCs we have seen and is perfect as a high-end gaming system or enriv-level workstation



Mitac Hades Series

GeForce 7900GT graphics adapter; 19in BenQ LCD monitor 300GR Maxtor Diamond Max 10 SATA II hard drive: LG DVD burner: 3.5in floopy drive: 4 x 5.25in and 4 x 3.5in drive bays: 6 x USB 2.0; 2 x FireWire; 1 x eSATA: 2 x Gigabit Ethernet; built-in Wi-Fi; cordless Logitech keyboard and mouse: Logitech X-530 speakers: Windows XP Pro

All up, this isn't the fastest machine we've seen, but it's well priced and well put-together. It would suit a gamer or video editor



Price: \$4649 Phone: 1300 100 100 URL: www.mitac.com.au Warranty: 3 years on-site Intel Pentium D 930 CPU, Intel 975X chipset, 512MB Gigabyte Radeon X1900XTX, 19in ViewSonic VX922 LCD. 2 x 250GB WD hard disks, 2GB DDR2 RAM, Lite-On LightScribe DVD burner, 6 x USB 2.0, 3 x FireWire, Gigabit Ethernet, card reader, Full-tower case, 5 x 5.25in and 7 x 3.5in drive bays, Logitech Z-5400 speakers, Logitech G15 keyboard, Logitech G5 mouse, Windows XP Pro

5832 →

Solid application and 3-D performance makes this machine suitable for high-end gaming and video editing.

112 -

PERFORMANCE / COMMENTS



Claritas CLT-302 Price: \$2999 Phone: (02) 8215 0526 IIRI - www.claritas.com.au Warranty: 1 year on-site Full review see Cover DVD



Pioneer DreamVision Media Centre PC Price: \$2699

Phone: (02) 9690 2888 HRI - www ninnear net au Warranty: 1 year on-site



Intel Pentium D (2.8GHz), Intel 945G, 1GB RAM, 200GB Samsung HDD, DVD burner, 128MB GeForce 6200 TurboCache, VGA, DVI, S-Video, Composite Out, 6 x USB 2.0. 7.1 analog ouput, digital S/PDIF output, Home theatre style. 432x105x410mm, LED Display, 2 x digital HD tuners, Gigabit Ethernet

Intel Pentium D (3GHz), Intel 945G, 1GB RAM, 300GB Seagate HDD, double-layer DVD burner, 5-in-1 Media Card Reader, 256MB GeForce 6200 TurboCache, VGA DVI, Component, S-Video, Composite, 6 x USB 2.0, 7.1 analog ouput, digital S/PDIF output, Home theatre style, 425x100x425mm, LED Display, 2 x digital HD tuners,

This unit was among our favourites and we think with a little refining (we'd like to see a single dual-tuner TV card instead of two individual single tuners, a Wi-Fi card and a LFD display that does not burn our retinas) it could be the ideal media centre for the living room.

There isn't much wrong with this system at all: it looks good.

works well, has good support and ships with a 12-month

subscription to IceGuide. We think it's the best unit in this

round up, despite the lack of a built-in infrared receiver.



Altech Magetra Pra V Price: \$2999 Phone: (02) 8831 9999 IIPI - www altech com au Warranty: 1 year on-site Full review see Cover DVD

Gigabit Ethernet

Intel Pentium D (3GHz), Intel 945G, 1GB RAM, 250GB Samsung HDD, double-layer DVD burner, 7-in-1 Media Card Reader, 128MB GeForce 6600GT, VGA, DVI, S-Video. Composite, 6 x USB 2.0, 7.1 analog ouput, digital S/PDIF output. Home theatre style. 439x175x420mm. LFD Display. 1 x digital HD tuner, Gigabit Ethernet

This unit comes close to being what a media centre PC should he, but it doesn't quite make it. It's a good size and it has room for expansion, but it needs a second digital TV tuner, a component output and a drive cage so the hard drive won't vibrate



Enspire AVX-500 Price: \$2649 Phone: 1300 880 070 IIRI - www.enspiredigital.com au Warranty: 1 year on-site

Intel Pentium D (2.8GHz), Intel 945G, 1GB RAM, 2 x 250GB Samsung HDD, 256MB GeForce 6200 TurboCache VGA, DVI, Component, S-Video, Composite, 6 x USB 2.0, 7.1 analog ouput, digital S/PDIF output, Home theatre style, 432x105x410mm, 1 x dual-digital HD tuner Gigabit Ethernet, 802.11g

This machine is well designed for the most part and looks good to boot. It has the largest amount of storage space in the review, which should please anyone with vast media libraries and full TV recording schedules. However, we do wish it was a little quieter and had a built-in infrared receiver



HP Media Centre 7398 Price: \$2900 Phone: 13 2347 URL: www.hp.com.au Warranty: 1 year on-site Full review see Cover DVD Intel Pentium D (3GHz); Intel 945G, 2GB RAM; 250GB HDD: Double-layer, LightScribe-capable DVD burner: 7-in-1 Media Card Reader; 128MB GeForce 6600; VGA; DVI; S-Video; Composite; 6 x USB 2.0; 7.1 analog ouput; digital S/PDIF output: 191x380x405mm Tower: 1 x digital HD tuner-2 x S-Video and Composite: Gigabit Ethernet: 802.11g

We love the functionality and ease of use of this unit. especially the standard Wi-Fi module. It's the perfect media centre for anyone who doesn't mind the tower form factor. We hope HP considers building a machine with the same type of functionality in a home theatre-style case - and preferably at that point they can also get rid of all the extraneous cables required for the input devices

Powerful Protection

The new black range from Eaton Powerware

They're black, they're sleek, they cover every

computing application. Powerware has created a range which covers looks, usage and price.

When you think of the high speed and massive information density of your system's hard disks; and the complexity of today's electronics, it's no wonder even brief fluctuations in power quality can wreak havoc. Powerware is dedicated to the protection of power quality and the heart of this is the 3-5-9 system. You judge the level of protection needed. At the desktop it may be power failures and surges At departmental level, to keep the voltage

smooth. But with mission-critical servers, you need all the protection available. Powerware has a complete range of UPS from simple workstation power boards to large 3-phase data centre and industrial

units. With over 60 models - and custom-built units - Powerware has all the answers you need. Level 3, 5 or 9, they give powerful protection.

F:T-N

Powerware

1300 UPS UPS www. powerware.com.au

88 →

83 -



pc world Test centre

SHR-\$2500

HP Pavilion DV1610 Price: \$1899 Phone: 13 1347 IIPI . www hn com so Warranty: 1 year Full review see Cover DVD

FEATURES AND SPECIFICATIONS

PERFORMANCE / COMMENTS



An excellent mobile media centre at a great price.



Toshiba Tecra A7 T2300

x LISB 2.0. PC Card. ExpressCard. Altec Lansing speakers. 2.44kg Price - \$2420 Phone: 13 3070

Tecra A7 Core Duo T2300 (1.67GHz), Mobile Intel 945PM chipset, ATI Mobility Radeon X1600 graphics, 15.4in WXGA (1280x800) screen, 512MB DDR2 533MHz, 60GB 5400rnm (SATA) HDD. SunerMulti dual laver DVD. WinXP-Pro SP2 (DEM). Gigabit LAN, WLAN (Intel abg), Parallel, Bluetooth V2.0+EDR, ATI M56P 128MB Dual Point, 6-in-1 Media Reader, TPM, 4 x

Intel Core Dun Processor T2300 (1.66GHz). Intel Centrino Duo

2 x 256MB DDR2 SDRAM (Upgradeable to 2GB), Intel Graphics

Media Accelerator 95080GB (5400rom), 80GB HDD, LightScribe

Dual Laver DVD+RW/+R Modem 10/100 LAN Intel PRO/Wireless

802.11a/b/g, WLAN, Bluetooth, 14in (1280x768) screen, 6-in-1 Digital Media Reader slot, IEEE 1394 port. S-Video out. VGA out. 3

86 →



URL: www.isd.toshiba.com.au Warranty: 1 year

USB 2.0. 2.8kg

Great security and build quality. The first Centrino Duo enter the Sub-\$2500 category.



Real levhook 855 Price- \$2299 Phone: 1300 130 336 URL: www.beng.com.au Warranty: 2 years on-site, next business day pickup and delivery Intel Core Duo T2300 (1 66GHz) 1GB of 533MHz DDR2 RAM NVIDIA GeForce Go 7400. 15.4in screen. 80GB 5400rpm SATA HDD. 8 x Double Layer DVD burner, 4 x USB 2.0. FireWire. 802 11a/h/g Wi-Fi, Gigabit Ethernet, 56K modem, S-Video and VGA Out. SPDIF. Port Replicator slot, 4-in-1 Media Card Reader (MS/MS-Pro/SD/MMC), 2.8kg without PSU

This is a well balanced unit with good battery-life and good performance for its price



Lenovo 3000 N100 Price: \$2583 Phone: 1300 557 073 URI: www.lenovo.com/au Warranty: 1 year Full review see Cover DVD Intel Core Duo T2400 1 83GHz Intel Centrino Duo, 512MB RAM. 80GB HDD, 15.4in (1680x1050) TFT display, 128MB NVIDIA GeForce Go 7300, Media Bay, Dual Layer DVD burner, 10/100 Ethernet, 56K V.92 modern, FireWire, 4 x USB 2.0. S-Video out. PC Card, Webcam, mic, Wi-Fi a/b/g, Bluetooth, Fingerprint Reader,

Strong performance, great screen, short battery and no gigabit Ethernet



Dell Inspiren 640m PRICE, \$2200 VENDOR: Dell PHONE: 1800 099 380 IIRI - www.dell.com.au/review NEW - Full routew cop Web cite Intel 1 83GHz Core Duo T2400 CPU, 1GB DDR2 RAM (667MHz). Intel 945GM Chinset 14 1in screen (1280x800) Wi-Fi 802 11a/ b/g 5-in-1 card reader ((MS, MS-Pro, SD, MMC, xD), 10/100 Ethernet, CD Burner/DVD ROM Combo drive, 60GB (7200rpm) HDD FireWire 4 x USB 2.0. S-Video out, VGA out, weight 2.8kg (with PSU) and 2.5kg (without PSU), 3 year onsite warranty (pick un and return's

This a solid unit with a lot of grunt for its size and a price that won't put a dent in your wallet. It's comfortable to use and doesn't weigh a tonne, though the screen wasn't ideal.

\$2500-\$4000



Acer TravelMate 3010 PRICE: \$2699 VENDOR- Acer PHONE, 1300 366 567 URL: www.acer.com.au NEW - Full review see page 30 Intel 1 66GHz T2300 Core Duo CPU, 512MB DDR2 PC4200 RAM (533MHz), Intel 945GM Chipset, 12.1in screen (1280x800), Wi-Fi 802 11a/b/g Bluetooth, 5-un-1 Media Card reader, Gigabit LAN. External DVD-RW Super-Multi drive (dual-layer), 80GB HDD (5400rnm), 3 x HSB 2.0, VGA out, FireWire, Gigabit Ethernet, Acer

FEATURES AND SPECIFICATIONS

PERFORMANCE / COMMENTS



Benû JoyBook S61 v30 Price: \$2500 Phone: 1300 130 336 URL: www.beng.com.au Warranty: 2 years onsite, pickup EzDock port, PC card slot (type II), weight 1.5kg (alone) and 2.4kg (w/PSII and ontical drive), 3 years nick up and return warranty Intel Centrino Duo T2300 CPU: Intel 945GM chipset with GMA 950 graphics; 12.1in glossy widescreen; 80GB SATA HDD:

Performed well for its components and has a good price for an ultraportable.



return-to-base



Full review see Cover DVI Acer Aspire 5672WLMi

512MB DDR2 RAM (upgradeable to 1GB); 8 x DVD burner; Bluetooth 2.0 EDR; Digital TV tuner; Gigabit LAN; 56K modem; 802.11a/b/g Wi-Fi; 3 x USB 2.0; 1 x FireWire; VGA; 1 x PCI Express Card (Type II) slot: memory card reader

Use this as a media centre notebook at home, or use it as a productivity tool on the road. Its battery life was excellent.

Warranty: 1 year return-to-base

Price: \$2500 Phone: 1300 366 567 URL: www.acer.com.au Intel Core Duo T2300 (1.66GHz, 2MB cache, 667MHz FSB), Intel 945PM chipset, 15.4in WXGA screen TFT, ATI Radeon X1400 graphics adapter, 1GB DDR2-SDRAM (2 x 512MB). 100GB SATA HDD, Slot-loading DVD Super Multi Dual Laver. 56K modem, 10/100/1000 LAN, 802,11a/b/g Wi-Fi LAN + Bluetooth, 3kg

Light weight with powerful multitasking. However, it is not

Dell Inspiron 9400 PRICE: \$3800 VENDOR: Dell PHONE-1800 099 380 URL: www.dell.com.au/review NEW - Full review see Web site Intel 2.16GHz T2600 Core Duo CPU, 1GB DDR2 RAM (667MHz), NVIDIA GeForece Go 7900 GS, 17in screen (1920x1200), Wi-Fi 802.11a/b/g, 10/100 Ethernet, 56k modem, 60GB SATA HDD (5400), 8 x DVD-RW Drive (dual-layer), 5-in-1 media card reader (MS, MS-Pro, SD, MMC, xD), FireWire, 6 x USB 2.0, VGA, DVI and S-Video out. Express card slot, weight 4.2kg (with



URL: www.hp.com.au*

PSU) 3.7kg (without PSU), 3 years pickup and return warranty Windows XP Tablet PC Edition: Intel 1.83GHz Core Duo Processor T2400: Intel 950GM Express chinset: 12.1in (1024x768) wide-viewing angle; 80GB (5400rpm); 1GB (1 x 1GB) DDR2 SDRAM (533MHz); 56K v.92 modem, Gigabit Ethernet, Wireless 802.11a/b/g, integrated Bluetooth 2.0, 3 x USB 2.0, Media card reader (MMC, SD), S-Video and VGA out, weight 2.1kg (without

PSU) 2.5kg (with PSU), 3 years on-site warranty

A powerful notebook, especially for gaming. While the cost is still high, it's much cheaper than their XPS range and has plenty of grunt. 84 →

3782

spectactular for gaming

Although it's a high price to pay, this is a thoughtfully designed notebook that also doubles as a tablet. It has enough power to get you by, it's easy to use and it has excellent battery life.

96 →

CHIMEI

Simple but Professional

Superior Brightness: 330cd/m2 High Contrast Ratio: 800:1 Fast Response Time: 5ms(tf+tr)

High Resolution : 1680 x 1050 / WSXGA+

CMV 221D LCD MONITOR



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BESTBUYS WIRELESS ROUTERS

DC WORLD TEST CENTRE		WI-FI SPEEDS			ADAPTER		
To diffine	MIMO ROUTERS	WI-FI SECURITY	FEATURES	COMPATIBLE ADAPTER	PRICE		
1 St. World	Netgear RangeMax WPN824 Price: \$199 Phone: 1800 502 061 URL: www.netgear.com.au Full review see Cover DVD	11Mbps, 54Mbps, 108Mbps WEP 64/128-bit, WPA-PSK	NAT, DHCP, 4-port switch, SPI firewall, DoS prevention, VPN (IPSec, L2TP, PPTP), DMZ, port- forwarding, dynamic DNS	Netgear RangeMax WPN511 PCMCIA adapter	\$139		
E WOT C	Netgear RangeMax 240 WPNT834 Price: \$289 Phone: 1800 502 061 URL: www.netgear.com.au Full review see Cover DVD	11Mbps, 54Mbps, 108Mbps, 240Mbps WEP 64/128-bit, WPA-PSK, WPA2	NAT, DHCP, 4-port switch, SPI firewall, DoS prevention, VPN, DMZ, port-forwarding, dynamic DNS	Netgear WPNT511 PCMCIA adapter	\$229		
34000404	Buffalo AirStation MIMO WZR-\$108 Price: \$239 Phone: (02) 9599 3355 URL: www.uniden.com.au Full review see Cover DVD	11Mbps, 54Mbps, 108Mbps WEP 64/128-bit, WPA-PSK	NAT, DHCP, 4-port switch, SPI firewall, intrusion detection, DMZ, port-forwarding, dynamic DNS, AOSS	Buffalo AirStation MIMO WLI-CB G108 PCMCIA adapter	\$169		
4	ASUS WL-56g M Price: \$299 Phone: 1300 278 788 URL: www.asus.com.au Full review see Cover DVD		Price: \$299 240Mbps Phone: 1300 278 788 URL: www.asus.com.au WFP 64/128-F		NAT, DHCP, 4-port switch, SPI frewall, intrusion detection, DMZ, port-forwarding, dynamic DNS, EZSetup	ASUS WL-106gM PCMCIA adapter	\$220
	D-Link DI-634M Price: 6230 Phose: 1300 700 100 URL: www.dlink.com.au Full review see Cover DVO		NAT, DHCP, 4-port switch, SPI firewall, keyword filtering, VPN (LZTP, PPTP), DMZ, port-forwarding, dynamic DNS	D-Link DWI-G650M PCMCIA adapter	\$140		
	Belkin Pre-N F5D823Dau4 Price: \$270 Phone: (02) 4372 8600 URL: www.belkin.com/au Full review see Cover DVD	11Mbps, 54Mbps, 108Mbps WEP 64/128-bit, WPA-PSK	NAT, DHCP, 4-port switch, SPI firewall, keyword filtering, DoS prevention, port-forwarding, DMZ, dynamic DNS	Belkin Pre-N PCMCIA adapter	\$169		
		WI-FI SPEEDS					
	NON-MIMO ROUTERS	WI-FI SECURITY	FEATURES	COMPATIBLE ADAPTER	ADAPTEI PRICE		
NON-MIMO ROUTERS TP-Link TI-WR6426 Price: \$99 Phone: 1300 259 927 URL: www.anywarc.com.au Full review see Cover DVD		11Mbps, 54Mbps, 108Mbps 64/128/152-bit WEP, WPA, WPA-PSK, TKIP/AES	NAT, DHCP, 4-port switch, DoS prevention, UPnP, dynamic DNS, DMZ host, VPN pass-through, firewall	TP-Link TL-WN620G USB adapter	\$49		
2	TP-Link-WR541G Price: \$75 Phone: 1300 269 927 URL: www.anyware.com.au Full review see Cover OVD	11Mbps, 54Mbps 64/128/152-bit WEP, WPA, WPA-PSK, TKIP/AES	NAT, DHCP, 4-Port switch, DoD prevention, UPnP, dynamic DNS, DMZ host, VPN pass-through, firewall	TL-WN321G adapter	\$30		
3	Braytek Vigor 29006 Security Router Price: \$250, free Wi-Fi adapter Phone: 1800 617 711 URL: www.ddcau.com.au Full review see Cover DVD	11Mbps, 54Mbps WEP 64/128-bit, WPA-PSK	NAT, DHCP, 4-port switch, SPI firewall, keyword filtering, DoS prevention, IP spoof protection, port-forwarding, DMZ, VPN (IPSec, PPTP, L2TP), bandwidth management, dynamic DNS	Draytek Vigor540 PCMCIA adapter	\$50		

94 AUSTRALIAN PC WORLD SEPTEMBER 2006

pc world									
TEST CENTRE	ADSL2 MODEMS	ADSL STANDARDS	NETWORKING	WIRELESS NETWORKING	DTHER FEATURES				
1 pc wor II	Dynalink RTA1025W Price: \$199 Price: \$190	ADSL; ADSL2; ADSL2+	4-port switch; DHCP server; port-forwarding; YPN; denial-of-service protection; content filtering	802.11b/g up to 54Mbps; WEP 256-bit WPA and WPA2 encryption	Quality of service control for data				
2	Level 1 W8R-3407A Price: \$165 Phone: 1800 617 711 URL: www.ddcau.com.au Full review see Cover DVD	ADSL; ADSL2; ADSL2+	4-port switch; DHCP server; port-forwarding; VPN; firewall	802.11b/g up to 54Mbps; WEP 128-bit and WPA encryption	None				
3	Linksys WAGS46 Price: \$210 Phone: 1800 678 808 URL: www.linksys.com.au Full review see Cover DVD	ADSL; ADSL2; ADSL2+	4-port switch; DHCP server; port-forwarding; YPN; SPI firewall; content filtering	802.11b/g up to 54Mbps; WEP 128-bit and WPA encryption	Can retain details for up to two PPoE accounts				
4	Draytek Vigor 2700V6 Price: \$299 Phone: 1800 617 711 URL: www.ddcau.com.au Full review see Cover DVD	ADSL; ADSL2; ADSL2+	4-port switch; DHCP server; port-forwarding; VPN; DMZ; SPI Firewall; URL, keyword and application filtering	802.11b/g up to 54Mbps; WEP 128-bit, WPA and WPA2 encryption	Two VoIP ports; landline pass- through; QoS				
5	Netcomm MyNetGateway N83W Price: \$299 Phone: (02) 9424 2070 URL: www.netcomm.com.au Full review see Cover DVD	ADSL; ADSL2; ADSL2+	4-port switch; DHCP server; port-forwarding; VPN; denial-of-service protection; content filtering	802.11b/g up to 54Mbps; WEP 128-bit and WPA encryption	Two VoIP ports; landline telephone pass-through; QoS				
6	Billion BIPAC 7404/GP Price: \$299 Phone: (08) 8322 9544 URL: www.pcrange.biz Full review see Cover DVD	ADSL; ADSL2; ADSL2+	4-port switch; DHCP server; port-forwarding; DMZ; SPI Firewall; URL filtering	802.11b/g up to 54Mbps; WEP 128-bit, WPA and WPA2 encryption	Two VoIP ports; landline pass- through; QoS				
7	D-Link DSL-6604T Price: \$199.95 Phone: 1300 700 100 URL: www.dlink.com.au Full review see Cover DVD	ADSL; ADSL2; ADSL2+	4-port switch; DHCP server; port-forwarding; VPN; denial-of-service protection	802.11b/g up to 54Mbps; WEP 256-bit and WPA encryption	None				
8	Netgear D6834PN Price: \$329 Phone: 1800 502 061 URL: www.netgear.com.au Full review see Cover DVD	ADSL; ADSL2; ADSL2+	4-port switch; DHCP server; port-forwarding; VPN; denial-of-service protection; content filtering	802.11b/g up to 108Mbps; WEP 128-bit and WPA encryption	MIMO technology				
9	Draytek Vigor 2800G Price: \$330 Phone: 1800 617 711 URL: www.ddcau.com.au Full review see Cover DVD	ADSL; ADSL2; ADSL2+	4-port switch; DHCP server; port-forwarding; VPN; SPI firewall; denial-of-service protection; content filtering; rule-based packet filtering	802.11b/g up to 54Mbps downstream and upstream; WEP 128-bit, WPA and WPA2 encryption	USB print server; quality of service control for data				

SEPTEMBER 2006 AUSTRALIAN PC WORLD | 95

BESTBUYS 19in LCD MONITORS

DC WORLD	MODEL	PANEL TECHNOLOGY RESPONSE TIME OOT PITCH	INPUT SPEAKERS	CONTRAST RATIO BRIGHTNESS COLOUR DEPTH	HORIZ VIEWABLE ANGLE VERT VIEWABLE ANGLE	MAX POWER CONSUMPTION POWER SAVE MODE	COLOUR TEMPERATURE
pc world	ViewSonic VX922 Price: \$469 Phone: 1300 100 100 URL: www.viewsonic.com.au Full review see Cover DVD	TN 2ms 0.294mm	Analog and DVI No	650:1 270cd/m² 16.2 million	170 degrees 170 degrees	35 Watts Not stated	5400K, 6500K, 9300K, sRGB, User preset
2	Mitsubishi DV191B Price: \$499 Phone: (02) 9648 7777 URL: www.mitsubishi-electric. community: 3 years Full review see Cover DVD	Not stated 25ms 0.294mm	Analog and DVI Yes	700:1 300cd/m² 16.7 million	170 degrees 170 degrees	55 Watts <3 Watts	6500K, 7500K, 9300K, User preset
3	Diamond Digital DV197SB Price: \$539 Phone: (02) 9648 7777 URL: www.mitsubishi-electric. community: 3 years Full review see Cover DVD	Not stated 8ms 0.294mm	Analog and DVI No	550:1 270cd/m² 16.2 million	140 degrees 135 degrees	55 Watts <2 Watts	6500K, 9300K, User preset
4	Philips 19DS6FS/75 Price: \$599 Phone: 1300 651 993 URL: www.philips.com.au Warranty: 3 years Full review see Cover DVD	Not stated 8ms 0.294mm	Analog and DVI No	500:1 250cd/m² 16.2 million	160 degrees 160 degrees	34 Watts Not stated	5400K, 6500K, 9300K, sRGB, User preset
5	NEC AccuSync LCD92V Price: \$449 Phone: 13 1632 URL: www.nec.com.au Warrantly: 3 years Full review see Cover DVD	Not stated 16ms 0.294mm	Analog and DVI No	450:1 250cd/m² 16.2 million	160 degrees 160 degrees	37 Watts <2 Watts	6500K, 7500K, 9300K, User preset
6	ASUS PW191 Price: \$699 Phone: 1300 278 788 URL: www.asus.com.au Warrantly: 3 years Full review see Cover DVD	TN 8ms 0.285mm	Analog and DVI Yes	600:1 330cd/m² 16.2 million	150 degrees 130 degrees	48 Watts <2 Watts	5400K, 6500K, 9300K, sRGB, User preset
	Sony SDMHS95PS Price: \$949 Phone: 1300 720 071 URL: www.sony.com.au Warranty: 3 years	MVA* 12ms 0.294mm	Analog and DVI No	1000:1 450cd/m² 16.2 million	170 degrees 170 degrees	60 Watts Not stated	6500K, 9300K, sRGB, User preset

Full review see Cover DVD





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TEST CENTRE	MID-RANGE GRAPHICS CARDS	SPECIFICATIONS	CONNECTIVITY	BUNOLE	PERFORMANCE
10 Section	PowerColor X1800GT0 Price: \$329 Distributor: Australia IT Phone: (03) 9560 3188 URL: www.australiait.com.au NEW — Full review see Cover DVD	Radeon X1800GTD chipset; 12 pixel pipelines; 8 vertex pipelines; 500MHz chipset; 1GHz memory; 256MB GDDR3 memory; 256-bit memory controller; CrossFire	Dual DVI; Component; S-Video; Composite; Video-in	CyberLink DVD Solutions; break-out cable: Component, S-Video; DVI to VGA adapter; 12-Volt power adapter	30Mark2006 3318→ FEAR 35→ Quake 4 51→ Quake 4 with AA 42→
2	ASUS EN7600GT Price: \$349 Distributor: ASUS Phone: 1300 278 788 URL: www.asus.com.au NEW — Full review see Cover DVD	GeForce 7600GT chipset; 12 pixel pipelines; 5 vertex pipelines; 560MHz chipset; 1.4GHz memory; 256MB GDDR3 memory; 128-bit memory controller; SLI	Dual DVI; Component; S-Video DVD+RW 8x, DVD- RW 6x, DVD-RAM 5x	King Kong game; break-out cable: Component, S-Video; 2 x DVI to VGA adapters	30Mark2006 2944→ FEAR* 30→ Quake 4 67→ Quake 4 with AA* 43→
3	Sainward GeForce 7600GT PCX Price: \$350 Distributor: Australia IT Phone: (03) 9560 3188 URL: www.australiait.com.au MEW — Full review see Cover DVD	GeForce 7600GT chipset; 12 pixel pipelines; 5 vertex pipelines; 5 vertex pipelines; 560MHz chipset; 1.4GHz memory; 256MB GDDR3 memory; 128-bit memory controller; SLI	VGA; DVI; Component; S-Video; Composite	No software; break- out cable: Component, S-Video, Composite; DVI to VGA adapter	30Mark2006 3328→ FEAR* 31→ Quake 4 68→ Quake 4 with AA* 45→
4	Leadtek PX76006TT0H Price: \$330 Distributor: BCN Phone: (03) 9561 6166 URL: www.bcntech.com.au NEW — Full review see Cover DVD	GeForce 7600GT chipset; 12 pixel pipelines; 5 vertex pipelines; 5 vertex pipelines; 560MHz chipset; 1.4GHz memory; 256MB GDDR3 memory; 128-bit memory controller; SLI	Dual DVI; Component; S-Video; Composite	Senous Sam, Trackmania Nations games; break-out cable: Component, S-Video, Composite; DVI to VGA adapter	30Mark2006 3519→ FEAR* 30→ Quake 4 67→ Quake 4 with AA* 43→
5	Inno30 GeForce 7500GT Price: \$308 Distributor: Altech Phone: (02) 8831 9999 URL: www.altech.com.au NEW — Full review see Cover DVD	GeForce 7600GT chipset; 12 pixel pipelines; 5 vertex pipelines; 560MHz chipset; 1.4GHz memory; 256MB GDDR3 memory; 128-bit memory controller; SLI	Dual DVI; Component; S-Video	No software; break-out cable: Component, S-Video; DVI to VGA adapter	30Mark2006 3514→ FEAR* 30→ Quake 4 50→ Quake 4 with AA* 42→
6	XpertVision 76006T Price: \$359 Distributor: Altech Phone: (02) 8831 9999 URL: www.altech.com.au NEW — Full review see Cover DVD	GeForce 7600GT chipset; 12 pixel pipelines; 5 vertex pipelines; 560MHz chipset; 1.4GHz memory; 256MB GDDR3 memory; 128-bit memory controller; SLI	Dual DVI; Component; S-Video; Composite	Conflict: Global Storm game; Cyberlink PowerDVD; break-out cable: Component, S-Video, Composite; DVI to VGA adapter	3DMark2006 3588→ FEAR* 31→ Quake 4 62→ Quake 4 with AA* 45→
7	MSI NX7600GT Price: \$379 Distributor: Altech Phone: (02) 8831 9999 URL: www.altech.com.au NEW — Full review see Cover DVD	Geforce 7600GT chipset; 12 pixel pipelines; 5 vertex pipelines; 560MHz chipset; 1.4GHz memory; 256MB GDDR3 memory; 128-bit memory controller; SLI; silent cooling	Dual DVI; Component; S- Video; Composite	GT Legends game; CyberLink StarEditor; Cable dongle for Component, S-Video, Composite; DVI to VGA adapter	30Mark2006 3934→ FEAR* 29→ Quake 4 71→ Quake 4 with AA* 41 →
8	Sapphire X1600XT Ultimate Price: \$269 Distributor: Achieva Phone: (02) 9742 3288 URL: www.achieva.com.au NEW — Full review see Cover DVD	Radeon X1600XT chipset; 12 pixel pipelines; 5 vertex pipelines; 590MHz chipset; 1.4GHz memory; 256MB GDDR3 memory; 128-bit memory controller; CrossFire	VGA; DVI; Component; S- Video; Composite	No software; break-out cable: Component, S-Video; DVI to VGA adapter	30Mark2006 2826→ FEAR* 27→ Quake 4 38→ Quake 4 with AA* 41→
9	PowerColor X1600XT Bravo Price: \$251 Distributor: Australia IT Phone: (03) 9560 3188 URL: www.australiait.com.au NEW — Full review see Cover DVD	Radeon X1600XT chipset; 12 pixel pipelines; 5 vertex pipelines; 590MHz chipset; 1.4GHz memory; 256MB GDDR3 memory; 128-bit memory controller; CrossFire	Dual DVI; Component; S- Video; Composite	CyberLink DVD Solutions; break-out cable: Component, S-Video; DVI to VGA adapter; silent cooling	30Mark2006 2830→ FEAR* 26→ Quake 4 39→ Quake 4 with AA* 29 →
10	HIS Radeon X1600XT Price: \$279 Distributor: Altech Phone: (02) 8831 9999 URL: www.altech.com.au NEW — Full review see Cover DVD	Radeon X1600XT chipset; 12 pixel pipelines; 5 vertex pipelines; 590MHz chipset; 1.4GHz memory; 256MB GDDR3 memory; 128-bit memory controller; CrossFire	Dual DVI; Component; S-Video; Composite; Video-in	No software; break-out cable: Component, S-Video; DVI to VGA adapter	3BMark2005 2783→ FEAR* 26→ Quake 4 38→ Quake 4 with AA* 41→

[&]quot;= Tested with 16x AF and 4x AA

BESTBUYS TV TUNERS

pc world Test centre	MODEL	FEATURES AND SPECIFICATIONS	PERFORMANCE / COMMENTS		
Pc world	DVICO FusionHDTV DVB-T Dual Digital Price: \$299 URL: www.lakopacific.com.au Phone: 1800 657 601 Full review see Cover DVD	PCI, USB 2.0, HDTV, SDTV; Dual DVB-T tuners; PIP, time-shifting; recording scheduler; analog input; remote control; half-size mounting bracket; media centre compatible.	We love the fact that we can record or watch two programs simultraneously with this card, but we do wish there was an easier way to longle between tuners, and we also wish we could un-mute the second tuner while watching the main tuner.		
2	Nebula DigiTV PCI Price: \$199 Phone: (08) 8381 6511 URL: www.hyperrealify.com.au Full review see Cover DVD	PCI interface, SDTV, HDTV, DigTV software, BOA driver in development, time-shifting always on; analog pass-through (composite); antenna pass-through; remote control. Free 30-day trial subscription to keTV keGuide.	Like the USB version, this PCI card has feature-rich software well supported by the vendor, excellent recording and time-shifting capabilities; ability to bi set up to serve TV on a network.		
3	Nebula DigiTV USB Price: \$189 Phone: (08) 8381 6511 URL: www.hyperreality.com.au Full review see Cover DVD	USB 2.0 interface; SDTV, HDTV; DigTV software, BDA driver in development; time-shifting always on; no analog pass-through; antenna pass-through; remote control. Free 30-day trial subscription to IceTV IceGuide.	As with the PCI card version, this USB device has feature-rich software well supported by the vendor; excellent recording and time-shifting capabilities; ability to be set up to serve TV on a network.		
pc world	New Magic DIGITALVISIDN-HD Price: \$299 Phone: (02) 9528 4555 URL: www.newmagic.com.au Full review see Cover DVD	PCIe Interface; SDTV, HDTV; time-shifting; remote control; Australian Electronic Program Guide (GeGuide support); antenna pass-through. Free 30-day trial subscription to IceTV IceGuide.	We highly recommend this card if you want a robust solution for watching digital TV on your PC, as well as media centre-style functionality and EPG support. The only drawback was the involved installation procedure, but as long as you follow the instructions, you will have no problems.		
5	DVICO FusionHDTV VB-T Hybrid Price \$225 Phone: 1800 657 601 URL: www.lakopacific.com.au Full review see Cover DVD	PCI interface; SDTV, HDTV; FusionHDTV software; BDA driver; time-shifting; analog tuner; S-Video input; remote control.	If you live in an area where digital reception is flat then you can use this card to conveniently view analog reception instead.		
6	DVICO FusionHDTV DVB-T Plus Price: \$175 Phone: 1800 657 601 URL: www.lakopacific.com.au Full review see Cover DVD	PCI interface; SDTV, HDTV; FusionHDTV software, BDA driver; time-shifting; analog pass-through (composite, S-Video); antenna pass-through; remote control.	This card produced excellent picture quality and has an intuitive software interface. Compares favourabl with the other TV tuner devices we reviewed. Recommended, particularly for its good recording capabilities.		
7	Compro VideoMate U3 Price: \$139 Phone: 1300 269 927; 1300 132 682 URL: www.anyware.com.au; www.octek.com.au Full review see Cover DVD	USB 2.0; HDTV; SDTV; time-shifting; recording scheduler; picture-in-picture; BDA drivers.	This is the smallest digital TV tuner we have ever seen. Its performance was very good and its software fairly easy to use. It's the perfect tuner to share between a notebook and a PC and its timy size makes it an inconspicuous external tuner for a med centre PC.		
8	Compro DVB-T3DD Price: \$169 Phone: 1300 132 682, 1300 269 927 URL: www.octek.com.au; www.anyware.com.au Full review see Cover DVD	PCI interface; SDTV, HDTV; ComproDTV software; BDA driver; time-shifting; analog tuner; analog pass-through (composite, S-Video); remote control.	This card is great value considering its versatility. We recommend it, especially if you want a card that has the ability to power-up your system to initiate a recording.		
9	AverMedia AverTV Hybrid+FM PCI Price: \$154 Phone: (02) 8831 9999 URL: www.altech.com.au Full review see Cover DVD	PCI; SDTV; HDTV; analog tuner; composite and S-Video input; FM tuner; AverTV software; BDA driver; time-shifting; remote control.	This card is versatile and is well priced. However, we faced audio problems when recording HDTV, which prohibited it from achieving a higher place on this chart.		

PC WORLD	MODEL	PROJECTION TECHNOLOGY/ PROJECTION OISTANCE	ZOOM/ APERTURE/ FOCUS	ASPECT RATIO/ RESOLUTION	BRIGHTNESS/ CONTRAST	VIDEO INPUTS	OIMENSIONS (WXD1H)/WEIGHT/ POWER CONSUMPTION (WATTS)	OTHER FEATURES	SUITABLE FOR	WARRANTY/ LAMP WARRANTY/ LAMP COST
pe world	Panasonic PT-AE900E Price: \$3299 Phone: 1300 880 600 URL: www.panasonic. com.au	3LCD/ 1.2m-12.4m	2x/F1.9- 3.1/ manual	16:9/ 1280x720	1100 ANSI Lumens/ 5500:1	Component, HDMI, SCART, 15-pin D-sub, S-Video, Composite (RCA)	335mm x 270mm x 104mm/3.6kg/ 180W	Dynamic iris	Home theatre, PC presentation	2 years/3 months or 500 hours (pro-rata warranty from 3-12 months or 500-1001 hours depending on usage)/\$590
2 Octobro	Mitsubishi HC3000 Price: \$3499 Phone: (02) 9648 7777 URL: www.mitsubishi- electric.com.au	Single-chip DLP, 6-segment colour wheel/ 1.3m-10m	1.2x/ F2.4-2.6/ manual	15:9/ 1280x768	1000 ANSI Lumens/ 4000:1	Component, HDMI, 15-pin D-sub, S-Video, Composite (RCA)	310mm x 245mm x 100mm/2.9kg/ 280W	Two-level aperture control	Home theatre, PC presentation	2 years/ 12 months or 500 hours/\$599
3	Hitachi PJTX200W Price: \$3299 Phone: 1800 448 224 URL: http://aus.hitachi. com.au	3LCD/ 0.8m-13m	1.6x/ F1.7-2.4/ manual	16:9/ 1280x720	1200 ANSI Lumens/ 7000:1	Component, HDMI, 15-pin D-sub, S-Video, Composite (RCA)	340mm x 284mm x 145mm/4.7kg/ 220W	Dynamic iris	Home theatre, PC presentation	2 years/12 months or 500 hours/\$395
4	Epson EMP-TW600 Price: \$2999 Phone: (02) 8899 3666 URL: www.epson.com.au	3LCD/ 0.76m-7.6m	1.5x/ F2.1-2.8/ manual	16:9/ 1280x720	1600 ANSI Lumens/ 5000:1	Component, HDMI, SCART, 15-pin D-sub, S-Video, Composite (RCA)	406mm x 309mm x 124mm/5.2kg/ 240W	Dynamic iris	Home theatre, PC presentation	2 years/6 months/\$499
5	BenQ PE7700 Price: \$2799 Phone: (02) 9352 8800 URL: www.benq.com.au	Single-chip DLP, 6-segment colour wheel/1m- 10m	1.37x/ F2.4-2.8/ manual	16:9/ 1280x720	1100 ANSI Lumens/ 2500:1	Component, HDMI, S-Video, Composite (RCA)	380mm x 300mm x 115mm/5.5kg/ 320W	Picture- in-picture	Home theatre	2 years/3 months or 500 hours/\$620
6	Acer PH110 Price: \$1299 (with screen) Phone: 1300 366 567 URL: www.acer.com.au	Single-chip DLP, 4-segment colour wheel/ 1.2m-12m	1.2x/ F2.5-2.7/ manual	16:9/ 854x480	1100 ANSI Lumens/ 2000:1	15-pin D-sub, Component (via D-sub), S-Video, Composite (RCA)	265mm x 198mm x 92mm/2.3kg/ 250W	None	Home theatre	2 years/6 months or 1000 hours/\$399
7	Epson EMP-TWD1 Price: \$2499 Phone: (02) 8899 3666 URL: www.epson.com.au	3LCD/ 0.7m-11.3m	1.5x/ F1.7-2.1/ manual	16:9/ 854x480	1200 ANSI Lumens/ 1000:1	Composite, S-Video	340mm x 310mm x 200mm/7kg/ 220W	Built-in DVD player and speakers	Home theatre	2 years/6 months/\$349
	Sharp XR20S Price: \$2299 Phone: 1300 135 530 URL: www.sharp.net.au	Single-chip DLP, 4-segment colour wheel/ 1.4m-12.1m	1.15x/ 2.4-2.6/ manual	4:3/ 800x600	2300 ANSI Lumens/ 2000:1	15-pin D-sub, Component (via D-sub), S-Video, Composite (RCA)	315mm x 280mm x 109mm/3.9kg/ 330W	None	Home theatre, PC presentation	2 years/90 days/\$699
9	Toshiba TDP-P8 Price: \$3299 Phone: 13 3070 URL: www.isd.toshiba. com.au	Single-chip DLP, 4-segment colour wheel/ 1.5m-12.2m	1.15x/ F2.7- 2.88/ manual	4:3/ 1024x768	1500 ANSI Lumens/ 2100:1	15-pin D-sub, Component (via D-sub), S-Video, Composite (RCA)	200mm x 154.2mm x 75.3mm/1kg/ 195W	Ultra- portable	PC presen- tation, Home theatre	3 years/90 days/\$627
0	Sony Cineza VPL-HS60 Phone: \$3499 Phone: 1300 137 669 URL: www.sony.com.au	3LCD/ 1.3m-9.2m	1.6x/ F2.4-3.1/ manual	16:9/ 1280x720	1200 ANSI Lumens/ 1700- 10,000:1	Component, HDMI, 15-pin D-sub, S-Video, Composite (RCA)	348mm x 360mm x 135mm/5.6kg/ 195W	Dynamic iris	Home theatre	1 year/90 days/\$599

SEPTEMBER 2006 AUSTRALIAN PC WORLD | 99



ASUS recommends Windows® XP Professional

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CONTENTS

101 HELPSCREEN GENERAL

Unsuccessful recovery

Disabled hotkeys Laid out Event log errors Get the picture Turn-off

SECUPITY

Trojan attack foiled APPLICATIONS No row numbers

Macros disabled 104 HASSLE-EREE PC

- F-mail issues
- 105 BLIGS & FIXES Media player dangers
- 107 WINDOWS Feeling remote
- 110 LINUX Real virtuality
- 112 OFFICE Message mastery
- 114 IMAGING Sketch in time
- 116 DIGITAL VIDEO Sounds interesting
- 119 NETWORKING Remote control

Helpscreen

MOST OF IIS WILL HAVE EXPERIENCED DIFFICULTIES WITH OUR PCS AT SOME POINT. HELPSCREEN IS DEDICATED TO FINDING THE ANSWERS TO THESE PROBLEMS

GENERAL

UNSUCCESSFUL RECOVERY

I have a Sony notebook PC that became infected with a virus. I was advised to use recovery discs to make a fresh start and used those from a friend's Acer. After rebooting, it displayed a message about hardware/software changes and Windows wouldn't start. - Amariit Sohal

It's unlikely that this could ever have succeeded, because the Windows installation for the Acer notebook is probably set up for other hardware than your Sony system. There's no way around this problem, because what you have done contravenes the licence agreement of your friend's Acer notebook - although it was done for the best of reasons.

By using the recovery discs, you've also destroyed any chance of repairing the original Sony Windows installation. The only solution now is to buy another copy of XP and install it on the notebook. If that isn't palatable you could install Linux, which has no copying restrictions. There's a copy of Ubuntu on this month's Cover Disc - see FIGURE 1.



FIGURE 1: If you're stuck without a decent operating system, you'll find the very useful Ubuntu Linux on the Cover Disc

DISABLED HOTKEYS

The hotkeys that control the volume and mute on my Sony Vaio notebook have been disabled. I can adjust and mute the volume using the Windows control panel, but how can I enable these hotkeys again?

- Terry Snow

A These hotkeys will work only if their special driver software is running. Click on Start-Run and enter msconfig. Examine the Services and Startup tab and see whether the hotkey service has been disabled.

The name of this varies depending on the model, but on some Vaio notebook it is provided by bkserv exe. If you can't find the software to enable the service, you'll have to download and reinstall it from the Sony Vaio support Web site at www.vaio-link.com

I AID OUT

Since reinstalling XP my desktop icons screen, regardless of the setting in "Arrange Icons By".

- John Greenwood A You probably have the Auto Arrange option ticked. Ensure that "Lock desktop items" is unchecked - see FIGURE 2. If it's checked. icons can be moved but their positions aren't saved and they revert to their original positions at startup.



FIGURE 2: Make sure that "Lock desktop items" is unchecked

EVENT LOG ERRORS

On checking my system event log, I see that every time the PC starts up there are

BURNING ISSUES

A lot of the questions Helpline receives relate to disc-hurning problems. In most cases, nothing appears to be wrong with the setup and we can only suggest using hetter-muality media

If a brand is recommended by the manufacturer, use it. Otherwise go for a quality name such as Panasonic, Maxell. Sony or Ricoh. The hest discs are made. in Japan or Singapore. Some DVDs made in Taiwan are of acceptable quality, while those made in Hong Kong and China are generally noor. The name isn't a complete safeguard, though, there are fake discs on sale, usually sold very cheanly.

All DVDs contain a code called the media ID or manufacturer ID, which reveals the manufacturer's name - and therefore whether it's a fake Download the Nero InfoTool from www.cdspeed2000. com/download.html (or get if from the Cover Disc): it will show you the ID.

Using the blank DVD Media Quality Guide at www.digitalfag.com/media/ dydmedia.htm. you can get an idea of the quality. Check the type of disc as well as the manufacturer - some have a separate quality rating for each of the different types of media they sell.

If a drive refuses to write to a disc. it may be that it doesn't recognise the media ID and doesn't know the best settings to use. An upgrade to the drive's firmware, if available, can improve its compatibility with different media.



Some research can tell you if you're using bad media.

four error messages: "DCOM got error: The service database is locked" for each of netman. stiSVC winmomt and MCVRte. Are these errors important, or should I just ignore them? The system seems to work okay otherwise. Ian Fleming

There's no definitive explanation for this. Ian, but it's likely that this error occurs when a component tries to make an Internet connection when the PC isn't hooked up to the Web. If one of the entries was actually MCVSRTF, this is McAfee trying to update itself. The others are Windows services, so you don't appear to have a spyware problem.

PCs on dialun will often have no Internet connection. Those on broadband often won't be connected at startup until the system establishes the link. So software should be able to cone with an inability to contact a server in the Internet. Unless you encounter problems, it's probably fine to ignore these log entries.

GET THE PICTURE

I have received an e-mail with several JPEG picture attachments, but am unable to open any of them. Windows describes them as an Unknown File Type and when I try to open them. I receive the message: "This file does not have a program associated with it for performing this action. Create an association in the Folder Options control panel".

- Derek Goodwin Windows relies on the file extension to tell it what type a particular file is, so that it knows what application to select to open it with. We're guessing these images were sent from a Mac and the files don't have an extension, but it's possible the images are a different type, for which you have no software to open.

If they are JPEGs, one solution would be to save the attachments to your deskton, rightclick and rename each one, adding the suffix ".jpg". This will tell Windows that these are JPEGs — and if they really are, your existing software will know which program to use and will be able to open them.

A better solution would be to install the invaluable IrfanView from www.irfanview. com or the Cover Disc. This program is clever enough to work out what most files are - see FIGURE 3

Save the attachments to the desktop, then right-click them and select Send To-IrfanView. If it is a JPEG file, IrfanView will say something along the lines of "This is a JPEG file. Rename it?" Click Yes and the file will be displayed and given the correct extension so that it can be opened by other software in future.

You may be able to avoid the problem by having the pictures resent with the correct file type extensions. If your correspondent is using a Mac, tell them to use the option to send attachments with Windows-compatible extensions



FIGURE 3- IrfanView can snot an incorrectly-named file even if Windows can't.

TURN-OFF

My notebook PC keeps turning itself off. When it restarts, I send a report to Microsoft. It replies to me with the message: "Virus alert: A virus has been detected on your computer". I have Norton AntiVirus on my system and have now downloaded Windows Defender to help sort out the problem. This says the notebook is running fine, but after half an hour it restarts again.

- Stan Sargent

It's impossible to say whether your notebook Ahas a virus or not. There are some things that can't be determined by e-mail, so we'll accept Norton and Windows Defender's verdict that your computer is clean. But the restarting may be the result of a default Windows setting that can be changed.

Right-click My Computer, click Properties. select the Advanced tab and, under Startun and Recovery, click Settings. On the Startup and Recovery dialogue box, under System failure, you'll see the option "Automatically restart". Clear this option, and then click OK - see FIGURE 4.



FIGURE 4: Change this setting to stop unwanted reboots.

SECURITY

TROJAN ATTACK FOILED

Qwhile on the Internet, my firewall icon charted flashing a warning that there was an incoming attack by a Trojan, which had been blocked. I disconnected and then checked the firewall log, which recorded 12 intrusion attempts and the option "Cluck on the address to trace the attacker." A virus scan found nothing wrong, so I assume the firewall is working correctly and blocked the attacks. I'm wondering who this attacker is. How does the firewall know where the attack is coming from, and how do I stop these attacks? —Mal Culthine

A The firewall knows where the attack is over the Internet has both a sender and a recipient address—see FIGURE 5. However, it's easy to spoof the sender address. That seems to have happened in this case, as the IP address you gave does not belong to any known Internet domain.

Even if you did trace the sender, there is nothing you can usefully do about it. ISPs can't afford to take action against every so-called "script kiddle" running readily available hacking tools because they think it's cool. The attacker would have to gain access to your PC and do some damage before they might be persuaded to act. It's unlikely the attack was directed against you personally and everyone on the Internet receives these attacks, which is why we need to use firewalls to protect our PCs.

You can't stop the attacks at source, but you can stop them reaching their target by using a firewall. The best thing to do is turn off the alerts, let your firewall get on with its job silently and accept these attack attempts as a fact of life.

APPLICATIONS

NO ROW NUMBERS

Q The row numbers in Microsoft Excel have disappeared from the screen, although they appear on a printout and the column letters still show as normal. Because of this I can't select, insert or delete a row.

— Jim Weeks.

A Click on Tools-Options and select the View Lab. Under "Window options", clear the "Row & column headers" checkbox and click OK, which should remove the column letters as well. Then go back and reselect this option, bringing them back again.

If this doesn't help, try clearing Excel's configuration settings, Start the Registry Editor — click Start-Run, type regedit and press <Enter> — and expand Hkey_Current_User\ Software\Microsoft\Office\\version>, select the Excel folder and delete it. If this doesn't work, reinstall Excel.



FIGURE 5: Firewalls are essential to protect you from mindless Trojans.

MACROS DISABLED

Q When starting and closing Microsoft Word, a message box appears headed Microsoft Visual Basic, which states "The macros in this project are disabled. Please refer to the online help or documentation of the host application to determine how to enable macros", I don't use macros or Visual Basic.

- Tony Gaver

A Without knowing what the macros are, let's impossible to say whether they're required, malicious or part of something you never use. Use an up-to-date virus checker to rule out the possibility they are harmful as a first step. You can then enable macro support or remove the macros.

To enable macros in Word, click on Tools-Macro-Security or Tools-Options and select the Security tab. Click the Advanced or Macro Security button and set the security level to Medium.

To remove macros, click on Tools-Options-File Locations. Note the location of the User Templates folder, then close Word. Navigate to this folder using Windows Explorer and rename normal.dot to xnormal.dot.

Restart Word and a new normal.dot (document template) will be created without the macros. If this doesn't work then the macros may be in a file in the Word Startup folder. Repeat the steps above to locate this folder and rename any files within it.

BLUNDFRRIRD

There's a possible problem with Thunderbird's inbox and we thought we'd pass on a tip that you can use to avoid it

The first symptom is that, instead of downloading mail, Thunderbird displays in the status bar "Building summary file for Inbox".

Act immediately if you see this; further attempts to download mail may result in it being downloaded and deleted from the server. If so, the mail may never appear, or you may see large numbers of unread messages, but when you open them the text isn't present.

The problem occurs if mail folders are not compacted to remove deleted messages. This is a good idea to save space, but tiresome.

In Thunderbird 1.5, click on Tools-Options-Offline & Disc Space and tick "Compact folders when it will save over xkB" to do so automatically.

If you've already got a corrupt inbox, compacting may not be entired, may not be recorded (Ca)Documents and Settings1<usernme>-\ Application Data1\text{Thunderbird} closed, navigate to the place where the mail is stored (Ca)Documents and Settings1<usernme>-\ Application Data1\text{Thunderbird} and setter>-\ and delete the file named inbox.mst. If that doesn't work, rename the problem account, create another one with the same name and settings, then drag-and-drop your messages and folders from the old one to the replacement.



HELPSCREEN • Lavout.exe

- IrfanView
- Pixia
- The Gimp for Windows
- Nero InfoTool
 fillw
- FlashPlayer 8.0.24
- QuickTime Player 7.1
- Firefox 1.5.0.4

HERE'S HOW

- Cinescore demo
- ClearContext
 Sketchup

E-mail issues

STEVE BASS COMES LIP WITH THREE NEW FIXES FOR COMMON E-MAIL AGGRAVATIONS AND TWO MORE WAYS TO WASTE YOUR TIME



how to get the best from your PC.

o associates e-mail vou humongous attachments? Do dopey friends not know how to blind-copy e-mail to protect your privacy? I have a few ways for you to be less annoyed - and less annoving

The Hassle: I'm still on dial-up (I'm out in the back of Bourke and can't get broadband). I've asked my friends not to send file attachments the size of Uluru. but they often forget. Other than getting new mates, do you have a solution?

The Fix: It takes just a few minutes to

change the settings in your e-mail program. In Outlook Express, create a rule: select Tools-Message Rules-Mail, and then scroll through the conditions and check "Where the message size is more than size". In the "Select actions for your rule" menu, scroll to and check "Do not download it from the server". (Unfortunately, this also means that you'll never know that you were sent an e-mail.) In the "Rule Description" box, click the Size link, set the maximum

allowed message size, and click OK twice. I set mine at 1000KB (about 1MB), In Outlook 2003, choose Tools-Ontions, select the Mail Setup tab click Send/Receive-Edit. and check "Download complete item including attachments" and "Download only headers for items larger than xx KB" (where xx is a number you pick from a dron-down menu). Be sure to check the box next to "Receive mail items".

The Hassle: I e-mail a message to a bunch of friends, and they complain that the list of addresses is longer than the actual note. What's the deal with my e-mail messages?

The Fix: I'll bet you're adding e-mail addresses to the "To:" field - and broadcasting everyone's address in your e-mail. Instead. maintain everyone's anonymity by typing addresses into your e-mail client's blind carbon copy (BCC) field instead. Finding this can be tricky. however. In Outlook Express, create a new message, select View, and check "All



Headers" In Outlook.

choose View and check "Bcc Field". In Netscape, click the

To: field and scroll to "Bcc". In Yahoo Mail. click BCC, for Windows Live Mail, just click on the "Show Cc and Bcc" link at the top right of the new message pane.

The Hassle: Windows XP's welcome screen shows that I have unread messages even when I don't. Is there a way to turn this notification off?

The Fix: This is because the screen is updated if you use Hotmail. Outlook or Outlook Express (even if you use another e-mail app). To stop this alert from appearing, go to www.microsoft.com and search for "powertoys XP" to find and download the TweakUI powertoy, Run TweakUI, expand Logon-Unread Mail and uncheck "Show unread mail on Welcome screen". (Note: this won't work if your PC is connected to a network domain, in which case, you may not even see the Unread Mail branch.)

DIVERSIONS PENDULUMS AND FLOWS

I know where it starts. but can't find the ending. But it doesn't matter - Jenova Chen's flOw is an interesting diversion, with soothing music that's especially valuable if you're having a tough day at the office. Use your cursor to move around and

gobble up squiggly



flOw is a fairly relaxing way to spend a few spare moments

things. Play online at http://intihuatani.usc.edu/cloud/flowing/black.html, or get the offline version from the Cover

Alternatively, if you prefer infuriating and challenging, you could try the game at http:// varukinoki.net/flash/pendulumeca/. Use the mouse to pick points on the ceiling to attach him to and try to get him as far as you can.

SEPTEMBER 2006 104 ALISTRALIAN PC WORLD



advises you on how to fix the latest problems with your

operating system and software.

Media player dangers

AS IF COMPUTING WASN'T RISKY ENOUGH. STUART J JOHNSTON SHOWS HOW MEDIA PLAYERS CAN COMPROMISE YOUR SECURITY

edia players are a necessary part of today's digital entertainment on the ordin, but they also guiec crooks another entryway into your system. Cases in point: critical holes found in Adobe's Macromedia Flash Player and in Apple's QuickTime media player. A successful exploit of either bug could enable crackers to this vow with a drive-by malwayer download

Bugged versions of Flash Player 4, 5 and 6 accompanied virtually every copy of Windows, from Windows 98 first edition on up through Windows PSP 26 as described in Microsoft's Security Bulletin MSO6-020). The only exceptions are Windows 2000, Windows XP Pro x64 and Windows Server 2003. According to Adobe, all versions prior to 80.02 are at risk.

that you wouldn't soon be able to forget.

Because of this vulnerability, if you simply view a poisoned Web site or e-mail message containing a doctored flash movie (.swf) file, the player will crash due to a buffer overflow, and the corrupted file can run any command its perpetrator wants it to: download spyware, erase files or what have you.

No attacks had been reported at press time, but don't take any chances. Update the Microsoft-redistributed versions via Automatic Updates, or get version 9 from the Cover Disc or www.adobe.com/downloads.

QuickTime holes

Meanwhile, Apple has patched 12 critical holes in its own player with QuickTime 7.1 (for Windows and Mac OS). As with the Flash bugs, these vulnerabilities could cost you control of your Pc if you view a poisoned media file in QuickTime, but in this case, a range of movie and image file types may be used, including JPEG, BMP, AVI, MPG and QuickTime movies. You can obtain more information and the batched version from www.apple.com. or

WGA NOTIFICATIONS QUIETLY INSTALLED

Every time you go to Microsoft Update, Microsoft's Windows Genuine Advantage (WGA) program checks whether your copy of Windows XP is pirated. Now, Microsoft has begun quietly distributing a WGA Notifications program to some users via Automatic Ubdates.

The problem is, the automated process sometimes gets it wrong, repeatedly sending you a pop-up alert claiming that your legitimate Windows copy is bogus.

For now, Microsoft says, users will have the option of not installing the notifier when it pops up a licence agreement for them to accept. At some point it will become mandatory, though. And once

installed, the program can't be removed.

Microsoft has a community site to help users who are having problems with WGA. Go to
www.microsoft.com and serach for "WGA validation problems".



WGA will be mandatory at some point in the not-too-distant future.

install the QuickTime 7.1 player from the ${\bf Cover\ Disc.}$

Beware Word docs

Crooks have targeted a serious new hole in Microsoft Word, sending corrupted .doc files in e-mail attachments to invade vulnerable PCs. Some of the e-mail messages have subject lines like "Notice" and "RE Plan for final agreement". By the

time you read this, Microsoft should have patched the vulnerability in Word XP and Word 2003, so the patch will be available via Automatic Updates. So far, the number of known attacks is small; but as always, be extra careful with e-mail attachments, even if they purport to be from someone you know. Learn more about the bug by going to www.microsoft.com and searching for "191637" in Company 100 to 100 to

MOZILLA PATCHES

Mozilla has upgraded its Firefox browser and Thunderbird e-mail program to version 1.5.0.4 to close security holes, some of which could enable an attacker to take control of your PC.

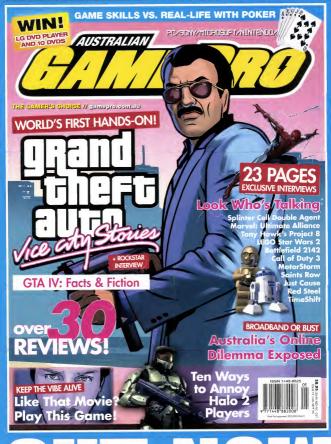
So be sure to say yes when either application prompts you to upgrade via its new (as of version 1.5) automatic update feature. You can find more into at www.mozilla.org/projects/security/known-vulnerabilities.html#Firefox, and the latest version is on the Cover Disc.

HOT TOPIC

Owners of the HP R707 digital camera should be aware that a mistake with the camera's firmware could present a safety risk when the camera is used with non-rechargeable batteries. Under these circumstances, the camera can overheat and present a notential fire risk.

The Australian site hasn't got it yet, but if you own one of these cameras, you should go to www.hp.com and search for "R707 firmware safety recall" to find a patch that will fix this problem.

IN OWIE



OUT NOW



Susan has been a Windows user since gleefully abandoning MS-DOS in the early 90s. After toiling through the Windows 95 years, she's now constantly searching for that next piece of indispensable Windows XP shareware

SUSAN PEDERSON-BRADBURY

Feeling remote

SUFFERING FROM TWO-PC SYNDROME? ACCESS FILES ON ONE COMPUTER FROM ANOTHER WITH THIS STUNNINGLY USEFUL BIT OF SOFTWARE

y partner in marital crime recently decamped for several weeks to the US to gather stock footage for a documentary film. After a few days of single parenthood. I decided to regroup with our two miniature troops to my parents' home and enjoy a weekend of prepared meals and baby wrangling.

However, I forgot to e-mail my article notes to their home computer, as well as a digital photo that I had promised them ages ago. At one time, I would have had no choice but to turn around and drive 100km back home if I really needed the files. Instead, my short-term memory loss simply gave me a great opportunity to test out this month's subject: RDC (Remote Desktop Connection).

RDC is a very handy piece of Windows XP software that allows you to access one PC from another, via the Web. It lets you view work files from home, for instance,

The only hitch is that the computer you want to access must have XP Professional installed on it. not XP Home. This is not usually a problem if it's your work PC that you want to access. If you're not sure whether you have Professional installed, choose Start-All Programs-Accessories-Windows Explorer, Then choose Help-About Windows, and the logo at the top will tell you what version you're using,

Accepting connections Assuming your PC is running Windows XP Professional, you can then set up the remote PC to accept incoming connections.



Choose Start, then right-click My Computer and choose Properties. Click on the Remote tab and check the "Allow users to connect remotely to this computer" box. If you click on Select Remote Users, you'll see

FIGURE 1. The Local Resources tab lets you select local devices that you can connect to

like printers.

that your user account already has access to this PC (obviously). You can also add other user accounts (to create them, choose User Accounts in Control Panel) or groups here.

Next, set up the local PC. Choose Start-All Programs-Accessories-Communications-Remote Deskton Connection. Click the Ontions button. The first tab. General. lets you put in the name or IP address of the remote PC, as well as username. password and domain. You can set up different connection profiles with Save as, The next tab, Display, lets you change the size of your RDC window. You can adjust the colours for the remote desktop. If you use a dialup connection, try 256 colours for a faster setup.

The Local Resources tab lets you choose whether you want to hear the sounds being played on the remote PC or have them echo through an empty office (which begs the question "Does a PC really go 'ding!' in an office if there's no-one

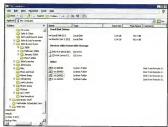
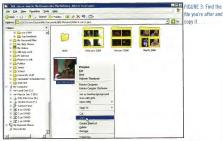


FIGURE 2: Local and remote drives are listed under the "Other" section in My Computer.

SEPTEMBER 2006 AUSTRALIAN PC WORLD | 107





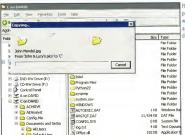


FIGURE 4: ... but be prepared for a long wait if you're copying a large file over a dial-un connection

around to hear it?"). If you want to do more than just view the files on your remote system, you'll also want to connect your local devices to it - see FIGURE 1.

Check the disk drives, printers and serial ports boxes so that you can copy files to the local PC, print them off on your local printer, or copy them to serial-port devices such as PDAs.

If you always use the same program on your remote PC, use the Programs tab to start it up automatically when you log on. Finally, the Experience tab lets you choose your connection and selects a level of graphical sophistication based on the speed.

You can override these

recommended settings, but the results will be very poor over a slow connection.

Hooking up

Make sure you're connected to the Internet then choose Connect. After a moment, the login screen should appear. Enter your name and password. If someone else is using the remote PC, they'll receive a warning that you are trying to log in, and if they don't disallow it, you will bump them off. If no one aborts your session and the network. Internet, and PC are all up and running, then your RDC screen should appear. This gives you instant access to your data.

If the connection is fast enough,

INSTALLATION

Although you need Windows XP Professional installed on the computer that you want to control, you don't need XP at all on the computer that will be doing the controlling. Simply install the client portion of Remote Desktop Connection — it will work on Windows 95, 98 and 985E, Me, NT 4.0 or 2000. If you have your Windows XP installation CD handy, pop it into the client machine hen the welcome screen pops up choose "Perform additional tasks" and then choose "Set up Remote and then choose "Set up Remote Desktop Connection". You can also download the software by going to www.microsoft.com and searching for "download RDC".

you can work within a program on the remote PC at this point, print documents from it on your local printer or copy files from one PC to another. To copy files, choose Start in the RDC window, then Windows Explorer. Under My Computer, you'll see that the local computer drives are listed as A, C, D and so on (see FIGURE 2), In my case, I right-clicked on that elusive file that I needed and chose Copy - see FIGURE 3.

On a slow connection, it may take a while to transfer, so you might want to make a cup of tea rather than sit and stare at the file transfer progress bar - see FIGURE 4. If the connection is lost during your session, you'll see a large flashing icon telling you that you need to reconnect.

Before you know it, voila - your file is safely with you again, and you haven't even left the house. This can be hugely beneficial. whether you're laden down with two little ones, or if your office is simply locked up for the weekend and you've got an urgent report to write. When you're through, choose Start-Log Off to disconnect (or Start-Disconnect). And congratulate yourself on the time and energy you've just saved.

To get to know RDC in more detail, take a look at Roger's Networking column on page 119. ■



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Real virtuality

VIRTUAL COMPUTING IS THE FLAVOUR OF THE MOMENT. SCOTT SPANBAUER LETS YOU IN ON THE REST WAYS TO KEEP YOUR OS AT ARM'S LENGTH



A contributor to PC World since 1998. Scott has won more than his fair share of awards, and spends much of his time tinkering and finding PC fixes.

hough you can never have too much speed, modern PCs are more than equal to the task of running basic productivity programs and Web browsers in a Linux-based graphical user interface. If your PC has untapped RAM, disk space and CPU horsepower, here's a great way to put that horsepower to work- install a virtual operating system (OS).

Virtualisation lets your main OS run copies of other OSes the same way you run programs, either in a window or full-screen. The host OS (a Linux distribution or Microsoft Windows) and the virtualisation software assign resources - network connections, optical drives, memory and the like - to the virtualised operating system, which behaves as if it controls the entire PC.

Who should use virtualisation software? If you're contemplating dual- or triple-booting operating systems on your PC, or you want to see how a new version of your current distribution behaves before upgrading, you'll want to consider it. Virtualisation software allows you to install and run a new OS without having to repartition your drive or reboot your main operating system. Virtualisation also lets you do risky things. like browse the Web using an unpatched version of Windows XP, without endangering the host system. Should someone back into your virtualised OS, the damage remains within the confines of the virtual container — to undo the damage, all you have to do is delete the virtual drive.

Until recently, virtualisation was an expensive proposition. But recent events have given Linux and Windows

Xen 3.0 has a reputation for good performance, but recompiling limits its compatibility.



users a choice of several powerful. free, virtualisation tools,

The art of Xen

XenSource's Xen 3.0 (www. xensource.com) is a free, opensource virtualisation server that works with any Linux distribution and comes partially preinstalled in Novell's SuSE Linux 10.1 and OpenSuSE 10.1, and Red Hat's Enterprise Linux 5 and Fedora Core 5 distributions.

Because Xen is small and runs as part of the Linux kernel, it has a reputation for good performance:

VMWare is a well-documented virtual machine. but comes with a noticeable drop in performance.





given enough memory, virtualised OSes should run nearly as fast as the host OS. However, Xen has a few drawbacks. For example, both host and guest operating systems must be recompiled to work with Xen, which limits the operating systems and distributions you can use. (See the Xen Wiki for a complete list.) Notably. you cannot currently run Windows XP virtually under Xen.

Most importantly, be prepared to become an expert at installing and configuring Xen; familiarising vourself with the user manual is a good way to start.

VMWare: not choosy

If you want to run Windows XP - or any other OS compatible with your computer's processor - in a virtual

Microsoft's Virtual Server lets you try out alternative operating systems and software under Windows XP Professional.



machine under Linux, bypass Xen and go to VMWare's free VMWare Virtual Server (www.vmware.com). The benefits are mostly the same as those of Xen 3.0 - you can try out new operating systems and run that malware will take over your PC - but the performance lag is more

risky programs under XP with no fear noticeable than with Xen.

Once you've installed VMWare Virtual Server (a multistep process that's well-documented in its user manual), you can install the operating system of your choice within a virtual machine, or skip the installation and simply download and plug in one of dozens of "virtual applications" (preinstalled and preconfigured VMWare virtual machine image files) from the company's Virtual Appliances directory, Ranging in size from a few megabytes to a gigabyte, VMWare's virtual applications include fullblown Linux distributions, databases, software firewalls, wikis, PBXs, proxy servers and security suites.

DAPPER DRAKE

In case you haven't netload, the latest version of Ubunts Linux (6.06 LTS or better known as Dapper Drake) has been released, and to save you the foruble (and bandwidth) of dominading if, we've put the 25-bit PC version on this month's Coop Disc.
It's a combination Live Install CD, which means that you can try it out and if, you like had you see.
It's a combination Live Install CD, which means that you can try it out and if, you like had you see.
One close, and it will start the Live 60 version must your hard drive, lost body your PC from the
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BS a breeze for newcomers.

This distribution must be forume 2.14 decktoon not not of Xerr 2.0 window system with the 2.6.16.6.

Us a tile-22 for fletwormers.

This distribution must be Gnome 2.16 desktop on top of X.org 7.0 window system with the 2.6.15.6 kernel, and comes in both Server and Desktop editions. It beets up much faster than the previous version (Breazy Badger), and the linclusion of a Cleartonks-skyle themse engine makes it much pretiter. For those of you who preter XD, there is Abuntur, er even a stripped-down XI eversion Called Xubuntu that's suitable for older systems.

As before, Consinger estrictions mean that Ubuntu ships with media support that's limited to open formats, but you'll find information on enabling restricted file types like MP3 at https://heip.ubuntu.com/community/RestrictedSmarks.

conicomountly/Restricted formats.

This also means that the Incredibly useful package manager Automatix (May issue, p108) is not included in this version, but thankfully a new Dapper-compatible version has been made available. To get Automatix up and running on your new install of Unbust 0.60 ISL. here's what you need to do. Open the sources list file in intellagif folder with a text editor and add the line:

doe https://www.beeccekid.com/automatix/xypt dapper main.

Then open a terminal window (click Accessories-Terminal) and enter the following command lines: wget http://www.beerorkid.com/automatix/apt/key.gpg.asc

gpg -import key.gpg.asc followed by,

This will make sure that apt recognises the GPG security key (you get the vertical line character with -Shift>-1), then finish the job with these: sudo apt-get update

This will open up a treasure trove of installable packages — be warned that some. like the DYD codecs, aren't legal in Australia — that you can install at will. Bear in mind that Automatix doesn't keep track of what you've installed previously, so make a note of what you've already got to avoid downloading the same thing biving.

Microsoft's offering

Finally, you might want to try virtualising the other way around. Not to be out-freebied, Microsoft recently released a free virtualisation program of its own, Microsoft Virtual Server 2005 R2, which runs Linux and other operating systems under Windows XP Professional Edition or Windows Server 2003, (Sorry, it won't work with Windows XP Home Edition.) The security benefits are different, but someone out there will undoubtedly want to run Linux under Windows, if only to dip a toe in the open-source waters before jumping ship,

Message mastery

OUTLOOK 2007 OFFERS PLENTY OF OPTIONS THAT HELP YOU TAME YOUR INBOX AND TO-DO LIST, BUT YOU CAN TAKE CONTROL RIGHT NOW



really want to say.

n Outlook 2007 any e-mails that look like they're part of the same conversation get a pair of tiny arrows at the top. This allows you to quickly jump back to the original e-mail or the previous message in the thread. This system is less disruptive than changing the whole view to Conversation and then back to Date - and it works with messages that are filed in different folders.

Outlook 2007 also adds simple time-management features. These include categories and coloured flags (see FIGURE 1), merging, flagged items showing up in the Tasks list on the new To-Do bar. and the option to right-click and assign a task to Today. Tomorrow. This Week or a specific day.

You're likely to find dozens of tasks and flagged messages you've never done anything about because they soon scrolled out of sight. pushed down by newer messages. Out of sight really is out of mind.

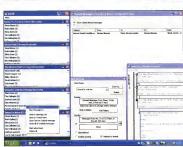
Snarf

If you don't want to wait for Office 2007 to sort yourself out. there are time- and informationmanagement tools you can add to Outlook, Snarf - the Social Network and Relationship Finder - is a free tool from Microsoft Research (see FIGURE 2), One day it might be part of Outlook, but for now you can download it from http://research.microsoft. com/community/Snarf.

The first time you start up Snarf it analyses your mail to work out the people you email the most. That information FIGURE 1- Outlook 2007 makes it easy to colourcode reminders and choose when to deal with them.



FIGURE 2: Use Snarf to get a mick overview of e-mails from people you talk to



comes in handy later on, since e-mail from your most frequent correspondents is likely to be your greatest concern

You can see various views that pick out mail that's sent only to you, mail that has several other people on the CC list, who you're corresponding with the most, or unread mail across all your folders rather than just in the inbox. These are all ranked by who Snarf has

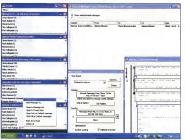


FIGURE 3: ClearContext finds important messages, groups them together and makes it easy to file them once they're dealt with.

calculated you talk to most. You can open individual messages or see a whole conversation threaded in one window, which is something that Outlook simply cannot do. Or you can flip the view around to see mail from people you never usually hear from.

At this stage Snarf is a very simple tool, but it's a good way to catch messages you might have missed when your inbox is full and you have only a few minutes to check.

It makes getting back after a holiday less painful, too. Future plans include letting you choose whose e-mail you care about most yourself.

ClearContext

ClearContext on the other hand, is a more sophisticated Outlook add-in that already lets you do that. Again, ClearContext goes through your mail and looks at your contacts to work out who's important to you — see FIGURE 3. You can tweak the priorities, but it usually jocks out the people whose e-mail you need to watch out for very effectively.

When mail arrives from those contacts you see it at the top of the folder, even if it's not the very latest message. This is handy for catching up quickly when you get back from lunch. Messages just to you are colour-coded in

red. If you're comfortable with the program you can change your inbox view.

Or you can have a folder with the ClearContext view and leave your inbox the way it is. Create projects (one by one for existing folders) and you can file e-mails, tasks and appointments together. You can also create a task or schedule an appointment from the ClearContext taskbar rather than fiddling around dragging the message into the calendar folder. You can even defer an e-mail, so if you want to deal with it at 4pm on Tuesday it will show up then as if it was a brand-new e-mail.

Version 2.0 of OlearContext is in beta now. When it's done, there will be a free version (ClearContext Inbox Manager Personal Edition, which prioritises e-mail and colour-codes it, ClearContext Inbox Manager, which also groups e-mails into the project they're related to and ClearContext Professional Information Management system, which lets you schedule tasks — or delegate them to someone else. Get the free version from the Cover Disc or from www.clearcontext.com.



get a menut, but the Yiew
manu that was at the
Chouse blue or black for the 2007 Office interface; either way you get
betom of the zeroen has
new Vista-style Office buttom instead of the File menu.

to switch between views. We're glad to see this change. Not only are the icons clearer, but the View menu was something of a dumping ground for features that hadn't been fitted in elsewhere, such as PowerPoint 2007's master-slide controls.

as Youer Front Cour's an association control of the title bar to save space, the different tabs on the The Quick Association should be some the title that the tabs in the latest beta of IE 7.0 — and the chunks now have titles at the bottom instead of the top. It's easier to spot, and it makes it more natural to click the - buttom to open a disleger box below the ribbon when the point you goed for it there.

Sketch in time

SKETCHUP, A QUIRKY, MINOR CAD PROGRAM, HAS SUDDENLY MADE IT TO THE BIG TIME, THE ANSWER MAY HAVE SOMETHING TO DO WITH GOOGLE ...



is a technology iournalist and author who has been enthusing about multimedia and design for more than a decade, even when nobody was taking any notice.

ntil this month, few CAD (computer-aided design) users had heard of AtLast's SketchUp 5.0 (www.sketchup.com) see June, p22 for Damien Donnelly's First Look. Autodesk has long dominated the technical illustration field, particularly when it comes to architectural models. SketchUp, a quirky modelling application, hadn't had much of a look-in.

But after years in the shadows. SketchUp is suddenly the hottest CAD application on the market. The reason? It's been bought by Google.

The news came as a surprise to many - after all, where's the obvious connection between a search-engine company and a 3-D authoring application? But it was surely inevitable that SketchUp would be snapped up sooner or later, because anyone who has used it has raved about it. Those who have baulked at the complexity of other 3-D applications find SketchUp easy to use.

The program really couldn't be simpler. You start with a basic isometric view - that is to say, looking at objects from a slightly raised diagonal angle. You draw a plane or enter its dimensions in a dialogue box, then use a delightfully simple Push/Pull tool to extend this plane upwards or downwards, giving it depth.

While you can, at a stretch, use SketchUp to model organic elements such as animals and humans, it's really aimed at architects and planners. Realistic buildings are easy to draw thanks to a range of pre-built textures and colours with an opacity adjuster, so you can add transparency effects. such as glass, to your models.

Impressive features

But its simplicity shouldn't imply that this is an underpowered piece of software. Take one of SketchUp's best features, inference locking, where the program suggests possible construction lines and points parallel or perpendicular to those on other planes. Equally impressive is a sectioning tool that cuts out parts of a plane so you can create windows or doors, or split a plane to get a cross-section view of your model.

To be fair, it's not the answer to every CAD problem - Autodesk is the market leader for a reason. But SketchUp shines because it makes it easy to import and export designs from other CAD packages in industrystandard DWG or DXF formats, I know people who use both applications in tandem. Basic plans are drawn up in Autodesk, brought to life quickly in SketchUp and then exported back to Autodesk for final tweaking.

Friends of the Farth

But SketchUp has been a great little program for years. Why the fuss about it now - and, more importantly, what's the sudden attraction for Google? The answer lies with the recently released free planetarymapping application Google Earth (http://earth.google.com)

Google Earth is a great program, but surprisingly few people realise that it is much more than an (admittedly amazing) way of exploring satellite views of the globe. You can also fly through buildings in three dimensions, with the structures rendered accurately on the map.

It's stunning to see this in action - just turn on the Buildings option and zoom through a large US city to see the effect. Nearly 40 cities Stateside have 3-D outlines of larger

CREATING ANIMATIONS

It isn't quite in the same league as Toy Story, but don't sniff at SketchUp's neatly thought-out animation feature. It works on the principle that each SketchUp file can contain more than one nage, each of which can have its own settings, such as camera or display. You can't tweak the detail of the animation, but SketchUp handles the smooth transitions between pages. The best part of the animation is that you can preview its effect in SketchUp and adjust the settings of each page independently in a Page Manager window. This means it's a great shortcut when it comes to getting multiple views of an object - simply store each camera view on a different page, and you can flick between them quickly.

The pages can be saved as an animation and exported as a plain AVI file. This provides a handy way of demonstrating your 3-D models in stunning multimedia detail to clients who don't have a SketchUp-compatible player.



SEPTEMBER 2006 114 AUSTRALIAN PC WORLD

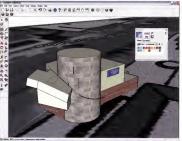


Google Earth can import SketchUp models to scale and in the correct geographical position.



locales such as Manhattan have been given the grey 3-D treatment by Google.

Various American



You can even import Google Earth images back into SketchUp. This is the meeting point of Google Earth and Sketchly. Sketchtly 5.0 was the first application to allow its own 3-D models to be exported Google Earth's native KMI format. More importantly, it can embed contextual information that describes the geographical position and scale of a 3-D object into the exported KMI. fle, so that as soon as you import a created object it is placed in the correct of bold position.

This is where the real beauty of the union between Google Earth and SketchUp Secones clear. Because Google Earth and SketchUp Secones clear. Because Google Earth maps terrain shapes—accurately showing gradients, hills and mountains as they are in real life—architects and planners can build realistic architectural models of buildings in SketchUp. They can then export them into Google's program in perfect position and scale to predict how they will look in the real-world. You can export the other way, too.

At the same time, Google Earth assumes more significance. Zooming in on satellite images is one thing, but imagine travelling through a pinpoint-accurate 3-D world. It would take the program on to — if you'll pardon the pun — an entirely new plans.

That's all well in the future of course, because at the moment, Google Earth's rendering, in contrast with SketchUp's, is pretty unattractive. The 3-D models in Google Earth are portrayed in a dealthy uniform grey — that's because, as yet, the KML format doesn't support texture mapping, and any detail imported from SketchUp is lost. I've no inside knowledge of whether a future update to KML will support rendering, but it's surely inevitable.

Other CAD developers have seen the benefits of linking seen the benefits of linking with Google Earth. ArchiCAD (www. graphisoft.com) and Bentley System's MicroStation (www.bentley.com), can also export KML files. But neither of those programs has been given the Google blessing in the same way as Sketchly. What was a program with a small but devoted following is suddenly a major rival.

The CAD world is suddenly very interesting indeed. See for yourself — the Google Sketchup is on this month's Cover Disc. ■

Sounds interesting

A GOOD VIDEO CAN BE MADE OR BROKEN BY THE SOUNDTRACK. SO WHAT'S THE BEST WAY TO LEGALLY ADD AUDIO TO YOUR MOVING PICTURES?



Ten years of videoing friends' weddings for free have left Laurence a hitter and twisted man. He complains constantly and is far too tall for his own good. Just be thankful you don't share an office with him.



ne of the simplest ways to add backing audio to your video production is

by ripping a CD or importing an MP3 file and dropping it onto the audio track, and nearly all video editing packages have tools for doing just that. However, if you read last month's column (p117) you'll know that it's not actually legal to do this with copyrighted content - though the chances are that no one will care as long as it's purely for personal use. So what are the alternatives?

Free stuff

The Creative Commons Web site has an enormously useful search engine at http://creativecommons. org/audio/ that lets you find works that can be used in your productions as long as you agree to certain conditions (see "Get creative"). Just make sure that you tick the box that says "I want to use this music in other works" to limit your results to "no derivative" tracks.

Magnatune (http://magnatune. com) is a useful source for both commercial and non-commercial projects, with a wide range of genres (including some excellent classical music that's great for wedding videos). The tracks are all free for non-commercial applications, but commercial users will have to purchase a licence based on the scope of their productions (from \$US5 for a wedding video, to \$US1000s for a full-scale film production).

In a similar vein. Freeplay Music (www.freeplaymusic.com) also allows music to be used for

FIGURE 1-Editors like Ulead VideoStudio and Pinnacle Studio often include the SmartSound QuickTracks nlug-in.



free in non-commercial, personal productions, which is great news as the Web site has a massive catalogue of quality tracks available for download. This licence does not extend to broadcast use, however, so posting it online or podcasting is not allowed.

While technically you've paid for it, another free option is the SmartSound QuickTracks plugin - which comes bundled with editors like Pinnacle Studio or Illead VideoStudio, see FIGURE 1 This cleverly creates a music track based on a library of 12 installed themes, and automatically trims it to the exact length of your sequence. The themes are a bit cheesy, but there's no licensing to be worried about here, even for commercial users (more themes are available for download).

Not free stuff

When it comes to buying reasonablypriced "buyout" tracks, my two

favourite providers are Music Bakery and Q-Music (www.musicbakerv.com and www.g-music.co.uk). They don't have the "free for non-commercial use" licence, but offer an impressive collection of professional-quality tracks in a variety of genres, which can be purchased as collections on CD or downloaded on a track-bytrack basis - see FIGURE 2. Music Bakery tracks have a tendency to lean towards an "American TV" feel, while Q-Music is generally pretty classy. They're both just as good as the other

Both sites offer a highly-flexible "buy once, licence forever" policy, with prices for single tracks starting at around \$US20, which is extremely cheap for the terms offered and the quality of their product.

If you're looking at high-volume distribution (more than 5000 copies), you should be aware that Music Bakery's terms change, but there's no such limit on Q-Music's

High score

While buyout music is great for conventional production elements. it's pretty limiting when you're trying to match music to a more complex project. For that, you need a score, and the good news is that you don't need to be a musician to create one, thanks to Sony's Cinescore. There's a review of it in First Looks (page 33), and we've put the 30-day trial on the Cover Disc.

Like SmartSound QuickTracks, Sony Cinescore is an automatic music generation tool that lets you pick a theme and the duration, and it'll generate a backing track that fits perfectly. But it does much more than that - allow me to demonstrate.

Usually, you'd drop the video you want to score onto the timeline. but we're only going to be kicking the tyres here. Open the Cinescore demo, close the pop-up tutorial window, and click the Generate Music button. Then select the "Monaco Diamond" theme, the "Banshee Theme (1)" variation preset, and then hit OK. You should get a 1min 55sec track that will appear in the Generated Music window. Preview the track with the playback controls and you'll find it's a slow-rising track that peaks in the middle and then trails off towards the end of the sequence - great

for a high-tech heist scene. Now let's assume that the scene cuts to a suspense point early on - our hero has to sneak past an unexpected guard, for example - so move the playback indicator to the

FIGURE 2: 0-Music's buyout tracks come with a "buy once use forever" licence, without the tiered pricing structure of most music suppliers.



FIGURE 3: Cinescore's Hints let you tweak the underlying score to match your video project more closely.



first "notch" of the first blue Break section by clicking the ruler above it, then click on the + button. This will add a "Hint", which is like a video keyframe in that it allows you to change values at specific points.

We actually want three of these for the suspense point, so repeat the process at the two following notches so that you end up with something that looks like FIGURE 3. Make sure the Hints line up with the notches by dragging them into place. Select the first Hint and expand the Intensity Change options. Change No to Yes using the drop down to enable the options, and change Amount to 80 per cent - this will bring the intensity up faster. In the next Hint, change the Amount to zero per cent and select "Hold" from the Mode options. At the next Hint, take the intensity back up to around 50 per cent, and the trough shape will be our suspense point. When you work

with video, this can be adjusted to match the action simply by dragging the Hints on the timeline.

But wait, there's more, Cinescore lets you change mood, as well. Add another Hint at the end of the Chorus section and change the Mood to "Urban Flava", the Arrangement to 6 and the Intensity Amount to 100 per cent. We also want to change the Break section back to a Verse. so change Deviation (under Section Change) to 70 per cent. This will switch the mood entirely, giving you a nice exit point to the scene (where our hero peels off his latex mask to reveal that he's actually Halle Berry in disguise, before driving off with the diamonds in her Mercedes F400 hev. I can dream, can't I?).

Hit OK to finalise the project and create a WAV file, or play around a bit more. I've only scratched the surface here, there's a lot more to learn about Cinescore,

GET CREATIVE

The Creative Commons licence allows musicians (and other artists) to release their work under a much freer form of copyright, so it can be used in your productions as long as it doesn't carry the "no derivative works" flag (or "no commercial"). you'll be making money from your production). If it's marked "Publi works - If you use making money from your production. It is a marked "Public Domain" then you're fee to do whatever you like with it, but usually "Attribution" is required — meaning that you have to provide credit to the artist in your work, along with the frestive Commons logo and licensing terms.

Be wary of works carrying the "Share Allke" flag, though. If you use these in your project, you'll be greeling to release finished video under the

same terms, which may not be wha you had in mind





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RUGER FANN Career dead-ends aside, for the past decade or so Roger has earned his crust as an IT journalist. He's now a freelancer, writing about all manner of IT subjects. He also likes to fix other people's networks when he can.

Remote control

RDC IS AN EXTREMELY USEFUL TOOL FOR THE NETWORK ADMIN. ROGER GANN GIVES YOU SOME TIPS ON SETTING IT UP PROPERLY

ne of my favourite network admin time-savers is without doubt RDC (Remote Desktop Connection). This simple utility lets you remotely access a Windows system over a network or the Web, provided it is set up to do so and you have proper access.

You open a connection to the PC and then view its virtual desktop. From here, you can access the remote computer as if it were your own: the desktop, client drives, audio sources, serial and parallel ports and printers. Even better, the local and remote computer share a clipboard, allowing data to be interchanged between applications.

So you can use it to monitor your headless server from across the office or access your PC from the other side of the world. Thanks to RDP (Remote Desktop Protocol), you can access any Windows XP Pro or Windows 2000 system from any other Windows, Pocket PC, Mac or Linux client. RDP works across any TOPI/P connection.

RDC in practice

Running RDC couldn't be simpler. To set up your PC to be remotely accessible, open the System folder in Control Panel. Under the Remote tab, check "Allow users to connect remotely to this computer". Ensure you have the proper permissions to connect to your computer remotely and click OK. Leave your PC running and click OK. Leave your PC running and connected to the company network with Internet access.

At another PC, click Start-All Programs-Accessories-Communication -Remote Desktop Connection. You then type in the remote computer's



It's easy enough to allow RDC through your Windows Firewall – there's an exception set up specifically for it.

IP address (or its network alias if both PCs are connected to the same network) and click Connect. If accepted, a window then appears displaying the remote desktop. Enter a username and password

and you're done.

If you use an NAT (network address translation) router, you'll need to forward TCP port 3389 to the IP address of the remote PC. Your firewall may well block RDC — the XP SP2 Windows Firewall can be configured to allow RDC by simply checking a box in the Exceptions tab.

The RDC client comes as standard with Windows XP Pro but the XP install CD also includes RDC clients for Windows 9x and Windows 2000 machines. Or you can download them from Microsoft's Web site. However, you don't actually

need to use a client program — it's possible to use Internet Explorer, courtesy of the Remote Desktop Web Connection if you wish.

web Connection if you wish.

Insert the Windows XP

Professional CD and select "Install additional windows components".

Highlight IIS (Internet Information Services) and click Details. Select World Wide Web services and click Details. Tick the checkbox next to "Remote desktop Web connection", click OX twice and Next to install. To connect to the remote desktop from any client computer using Internet Explorer, simply type http://llp

address of your PD/1x9web to bring up the Web connect dialogue.

RDC tips and tricks

Having a smooth and responsive RDC is the name of the game, and here are a few things you can do to reduce the lag effect, particularly on low-bandwidth connections.

Colour depth: Okay, it's a bit of an old chestnut, but you should consider dropping the colour depth of the remote workstation — assuming, that is, you don't need 16 million colours! This can have a huge impact on transfer speeds, resulting in quicker-responding connections.

Command prompt 1: You can resort to opening a command prompt instead of using Windows Explorer. Not only does the simple monochrome command line interface speed things up, but so will using DOS commands.

Command prompt 2: If you want to connect to a terminal server via the command prompt you can do so by typing mstsc -v:servername /F -console and hitting <Enter>,



Save my password

Save As

Save current

If you expand the basic RDC dialogue, additional options become available, allowing you to fine-tune your connection.



Oper

Just because the remote PC has a 1024x768 desktop doesn't mean you have to run it fullscreen

where mstsc represents the remote desktop connection executable file. v specifies which server to connect to, /F is for full-screen mode, and -console is there to indicate that you want to connect to the console.

Hide windows: If you really need to have multiple programs open at once, try to keep only one program's window visible and the rest minimised. The less window movement and changes on the remote desktop, the fewer data have to be transferred to your system and the less lag time you will experience.

No frills: Try turning all unnecessary features off. Do you really need the remote desktop's background graphic, or menu animations? Those desktop themes will just have to go. Keep things simple at your end: avoid using processor-intensive or bandwidth-intensive programs, which are guaranteed to affect the responsiveness of the RDC.

Easy switching: If you want <Alt>-<Tab> to switch between open windows on the remote PC, click Start-Run and type Mstsc in the dialogue box, Click on the Options button and the Local Resources tab, Select "On Remote Computer" from the Keyboard label drop-down, Click Connect and vou'll be able to use <Alt>-<Tab> to switch the windows opened on the remote system even when the RDC window isn't maximised.

Auto log-on: It is possible to let users automatically log on to a session without having to type their username and password each and every time they initiate a connection. For this, two things have to be done. At the server, open the Group Policy Object Editor (Start-Run, type gpedit, msc), double-click Administrative Templates, Windows Components, Terminal Services and then choose Encryption and Security. Open the properties box of "Always prompt client for password upon connection" and disable it. Open RDC on each client workstation, and in the General tab enter the log-on credentials in the appropriate boxes.

Accessing multiple PCs

Of course, RDC can only let you connect to one PC — what happens if there are several on the network you want to connect to? The answer is to change the default port that RDC listens on from each host computer This trick also increases security: it prevents detection by anyone doing a routine scan for RDC.

To change the listening port, open the Registry and drill down to Hkey Local Machine\ System\CurrentControlSet\Control\ TerminalServer\WinStations\RDP-Tcp\PortNumber.

From the Edit menu, click Modify. then Decimal. The default port is 3389. Choose a new port number - preferably a high one, say between 50000 and 65535, to avoid conflict with any other apps on your system. but you could theoretically use any port on the system. Obviously, choose a different port number for each workstation.

You'll probably also have to add an additional port-forwarding entry corresponding to the new port on your router for each workstation you want to connect to.

To access your computer remotely, instead of typing just the IP address, you now need to type the address followed by the port number. For example: 192.168.1.1:65000.

For a less technical overview of RDC, take a look at Susan's Windows column on page 107. ■

120 AUSTRALIAN PC WORLD



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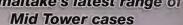
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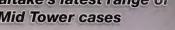


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Model	Genuine	TONNY	Model	Genuine	TONNY
LC-218K	\$30.00	\$7.90	LC-8008K	\$32.00	\$7.90
LC-21C/M/Y	\$17.00	\$7.50	LC-800C/M/Y	\$18.50	\$7.50
LC-028K	\$21.00	\$7.90			
LC-02C/M/Y	\$11.00	\$7.50			
LC-048K	\$28.00	\$7.90	Torre contra		
LO-040/M/Y	310.00	\$7.50	Angel Street	-	- 34
LC-47BK	\$32.00	\$7.90	- 06		
LC-47C/M/Y	\$18.50	\$7.50	2 10	-	

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Model	Genuine	TONNY	Model	Genuine TONNY
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12A1980	\$56.00	\$35.00	10N0026 (#26)	\$49.00 \$39.00
17G0050	\$46.00	\$32.00	15M0120 (#20)	\$53.00 \$41.00
17G0060	\$53.00	\$35.00	1800031 (#31)	\$43.00 \$35.00
13400HG	\$53.00	\$36.00	1600034 (#34)	343 00 535 00
13619HC	\$52.00	\$38.00	1800035 (#35)	\$45.00 \$37.00
10N0217	\$33.00	**	18L0032 (#82)	\$47.00 \$39.00
10N0227	\$35.00		18L0042 (#83)	\$53.00 \$41.00

HP Black Toner Cartridges

Model	Genuine	TONNY	Model	Genuine	TONNY
92298A	\$139.00	\$ 65.00	C8061X	\$165.00	\$ 85.00
C3906A/F	\$ 95.00	\$ 49.00	Q1338A	\$189.00	\$ 95.00
C3903A	\$120.00	\$ 59.00	Q2612A	\$ 95.00	\$ 59 00
C3909A	\$220.00	\$ 95.00	Q2613A	\$ 95.00	\$ 59.00
C4092A	\$ 87.00	\$ 49.00	Q2613X	\$125.00	\$ 69.00
040964	\$135.00	\$ 65.00	Q2610A	\$155.00	\$ 75.00
C4127A	\$145.00	\$ 65.00	Q2624A	\$ 96.00	\$ 59.00
C4127X	\$169.00	\$ 80.00	Q5942A	\$190.00	\$ 95.00
C4129X	\$210.00	\$ 95.00	Q5942X	\$279.00	\$125.00
C4182X	\$239.00	\$135.00	Q5949A	\$ 99.00	\$ 59.00
C7115A	\$ 89.00	\$ 49.00	Q5949X	\$169.00	\$ 75.00
C7115X	\$115.00	\$ 65.00	Q6511A	\$169.00	\$105.00

TONNY Colour Toner Cortridges

Printer Model	Model	Genuine	TONNY
HP LJ1500/2500, Canon L8P2410	C9700A (8K)	\$115.00	\$ 65.00
	C9701/2/3A (CYM)	\$135.00	\$ 79.00
HP LJ4600, Canon LBP2460/2040	C9720A (8K)	\$199.00	\$155.00
	C9721/2/3A (CYM)	\$262.00	\$185.00
HP LJ4500	C4191A (8K)	\$119.00	\$ 59.00
	C4192/3/4A (CMT)	5100.00	\$ 69.00
HP LJ8000	C4149A (BK)	\$150.00	\$ 89.00
	C4150/1/2A (CMY)	\$225.00	\$155.00
Epson C900/1900	S050100 (BK)	\$ 99.00	\$ 79.00
	S050097/98/99 (CMY)	\$210.00	\$119.00
Epson C1000/C2000	S050033 (BK)	\$119.00	\$ 90.00

Model EPL-57 EPL-59 FPI-62

Samsung Toner

Model	Genuine	TONNY
ML-1210D3	\$ 94.00	\$ 59.00
ML 1650D8	\$185.00	\$105.00
ML-1710D3	\$ 98.00	\$ 59.00
ML-2010	\$103.00	\$ 59.00
ML-2150D8	\$185.00	\$140.00
ML-4100D3	\$ 99.00	\$ 83.00
ML-4500D3	\$119.00	\$ 73.00
ML-6060D6	\$155.00	\$ 93.00
SCX-4216D3	\$ 99.00	\$ 69.00
SCX-5312D6	\$ 95.00	\$ 79.00
SF-5100D3	\$ 59.00	\$ 59.00

Brother Toner Cartridges

	•	
Model	Genuine	TONNY
TN-100	\$ 29.00	\$23.00
TN-200	\$ 42.00	\$23.00
TN-2025	\$ 74.00	\$59.00
TN-300	\$ 42.00	\$23.00
TN-3060	\$125.00	\$65.00
TN-8000	\$ 43.00	\$23.00
TN-6600	\$ 99.00	\$65.00
TN-7600	\$125.00	\$65.00

Canon Toner

Carriages				
Model	Genuine	TONNY		
EP-22	\$ 99.00	\$49.00		
EP-25	\$ 99.00	\$49.00		
EP-26	\$109.00	\$69.00		
EP-32	\$145.00	\$65.00		
EP-52	\$185.00	\$80.00		
E-31	\$189.00	\$85.00		
FX-3	\$132.00	\$59.00		
CART-303	\$ 83.00	\$59.00		
CART-U	\$ 99.00	\$69.00		

S050034/5/6(CMY) **Epson Toner Cartridges**

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\$249.00 \$119.00

Lexmark Toner Cartridges

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Optra E210	\$129.00	\$59.00	
optra E310	\$225.00	\$69.00	
Optra E/E+	\$135.00	\$59.00	
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PC/PS2/Xbox/360 Hitman: Blood Money

As if to outdo the opening scene of Hitman: Contracts, which had Agent 47 staggering into a seedy hotel to have bullets removed by a backstreet doctor, Blood Money starts with our favourite bald assassin's funeral — though this isn't made apparent until later on.

The latest episode of the successful stealth franchise sees Agent 47 returning to what he does best — sneaking up behind people and killing them. Of course, the storyline makes sure that all of his targets are morally destitute paedophiles or arms dealers so you don't feel too bad about being a soulless, heartless killer, albeit a sharply dressed one.

The first thing you'll notice about Blood Money is that the graphics engine has been completely overhauled, and looks far more impressive now. Character models, textures, details and lighting have all been updated, though 47 hasn't lost his purposeful stride. Something you'll particularly notice in later levels is how populous some of the areas can be — the New Orleans carnival and nightclub scenes, in particular, have you pushing your way through crowds of ecoole on the tail of your quarry.

As before, tactics and timing are key and, while you get a wide variety of weapons to play with, most levels can be successfully cleared with your trusty fibrewire and undetectable close-quarters weaponry. The less disruption you create in the pursuit of your objectives, the higher your rating and the more money you earn for each contract, which can then be spent on weapon upgrades and special equipment — or making sure witnesses don't talk and buying a new identity if things get too hot.

The skill level now includes a notoriety value, which makes guards and targets more suspicious of heavily-set bald guys creeping around the place. Harder settings restrict the number of



saves you can make during a game (or disabling the save option entirely), and you can post your times online.

It must be said, however, that the AI still isn't particularly smart: guards will chase you into a room only to lose interest because you're now wearing a different outfit, or insist on scanning you for weapons when you're only walking past the room they're minding.

While the graphics have changed, the underlying engine has not, so garrotting victims is still a little problematic at times, and you'll probably spot familiar character animations that have been recycled from previous titles. That said, the plottine is intriguing, and the last level brings a unique twist to the proceedings.

It's disappointing that most of the changes to Blood Money are largely cosmetic, but I guess If it ain't broke, then fans of the series will get as much out of this one as they have out of its predecessors.

Laurence Grayson





VERDICT: Fans of the title are going to be disappointed that their old favourite hasn't grown up with them. But despite its flaws, there are still a few laughs and fun to be had in this classic title.

SCORE: ***

PRICE: \$49.95 (PC) \$69.95 (console/handheld) PC/PSP/PS2/05 Micro Machines V4

URL: http://au.codemasters.com/micromachines

Originally a school-ground collecting fad, Micro Machines has become a small-time gaming phenomenon and its latest instalment V4 has quite a reputation to live up to. Sadly, little has changed to modernise the game from its original 1997 release on the NES. but things aren't all grim.

The best part of the game is undoubtedly the environments. Fifty different tracks incorporate their own unique world into the race. As you bounce around the course like balls in a pinball

NOT A NANO

No, the Sansa a 250 isn't a Mano. DK, it's slightly Manoesque, but it's not quite as small, it doesn't yon with l'unes, and it's definitely not as classy. But then again, the casing doesn't scratch when you breathe on it, it can tune into FM radio and record activant audio without the need for expensive accessories, the battery is customer-replaceable and last longer, the storage is expandable using MicroSD cards, the colour LOD screen is larger, and it costs less. On, and it can job yides, too.

It supports Microsoft's PlaysForSure for downloading purchased music and stores up to 468 of music, video or data. The colourful interface is accessed with a logical wheel and button control set (wonder where they got that idea from?)

Sadly, while it beats the Nano hands-down for sheer capability, the overall feel of the Sansa e280 isn't up to Apple's high standards. The earbuds are atrocious, and the switchgear feels cheap. So it really boils down to this. do you want features or finish?

SANDISK SANSA E260

PRICE: \$359 VENDOR: SanDisk URL: www.sandisk.com



machine you must navigate chicken coops, kitchen hot plates and glide within the reach of angry crabs. The next biggest addition to the game is a grand new array of deadly weapons. Although the new selection is a little cliched, there's no lost joy in pummelling your opponents with a cluster bomb, pounding them with a roof-mounted hammer, or simply jamming a homing rocket up their boot.

Each race you win earns you new cars, sometimes in "box Sets", with a total of 750 cars in 25 classes to collect. However, of the total number of cars available there are very few that are anything more than a new paint job. This is a fairly lax attempt at evoking nostaglia and little more is done to draw in the old-school fans. Different vehicles are suited to different maps. Variations in statistics affect the handling of each machine, but in most cases, you will rarely release the accelerator, as you can more efficiently drift around corners by simultaneously jamming down the brake and the properties of the proper

Apparently, developer Supersonic has employed the Havok physics engine to make car handling and environments more realistic — If you can call driving a toy car into a milk bottle realistic in the first place — but this hasn't made the slightest bit of difference to the gameplay of previous versions.

Unfortunately four wheels are all you'll see in this game, with no helicopters, hovercraft or other exciting modes of transport to choose from. Race maps are worth a cursory chuckle but they are often short and repetitive. Environmental gimmicks soon wear thin and the game modes are somewhat lacking in imagination.

The game's saving grace is the multiplayer where you can put any disappointments behind and slog it out with a group of your friends in a four-way micro face-off. In this mode, it's even possible to trade cars or play for keeps and take your friends' hard-earmed vehicles as a trophy. Unfortunately, the limited vehicle selection makes this a rather arbitrary function,

As an added bonus, the developers have included a track building tool so you can make your own race tracks. The process is oversimplified for the younger audience but it's still a nice touch. Tracks are created by starting with a base map before joining preselected waypoints until you form a complete loop. Weapons and power-ups are placed in fixed positions along the selected route. - Jesse Sutron



VERDICT: Not for everyone, but Heroes of Might and Magic V retains of everything that made previous instalments of the series such classist. It hasn't changed much and a few presentation issues left it down, but the new visuals and some great strategic gameplay keep

it entertaining.

SCORE: ***

PUBLISHER: Ubisoft

URL: www.mightandmagic.com/HeroesV/

PRICE: \$89.95

Heroes of Might and Magic V

The Heroes of Might and Magic series has been delighting gaming strategists for more than a decade now with its turn-based fantasy warfare. The latest in the series takes us back to the land of Ashan where the Griffin Empire is preparing to celebrate the marriage of the young Emperor Nicolal to his betrothed Isabel. Things go awry however when the wedding party is crashed by some demons, and they didn't just show up to drink the free boze and hit on the bridesmaids. Nicolal sees them off with his sword, and afterwards decides to lead his Empire to war against them.

You start the game as his prospective bride Isabel, and are quested with the task of pulling together a militia made up of local peasants and a few trained soldiers to fight back the demon scourge

The initial CG cinems sequence that tells this story has been beautifully rendered, but this doesn't extend to the in-game story. Unfortunately creating drams seems to have been the last thing on Nival's mind when developing Heroes V, the story is told entirely in some very ugly cut scenes where the characters remain almost motionless; no emotion, no lip-sync, just dialogue and poorly acted dialogue at that.

The lacklustre presentation of the plot is mostly forgivable, however, due to the fact that in general the game is graphically the best-looking entry in the Heroes series. Where previous games were presented from a two-dimensional isometric viewpoint, Heroes Vis the first to introduce a complete 3-D world to the series. The world of Ashan looks better than ever and is filled with rippling lakes, swaying trees and other such embellishments, as well as some detailed character models for you to lead into battle.

Then there is the gameplay. If you haven't yet played a Heroes

of Might and Magic game and are wondering if you'll like it there is one question you should ask yourself— and that is whether on not you like Chess, because that's what Heroes plays like. Of course, Chess never had persistent upgradeable characters, defensive and offensive spells to cast or towns and cities to invade, occupy and build upon, but the basic idea of taking turns to moving your pawns across a grid-like battlefield attempting to out-strategies your opponent (in either story mode or online multiplayer) is precisely what Heroes of Might and Magic provides.

The game can be slow and Hences VS turn-based gameplay doesn't have the action or the feeling of urgency that most strategy games strive for these days. The game does include a "Dynamic battle" mode, that attempts to speed up the combat by adding a ten-second time limit to your moves, but while this may interest some players, we felt that it actually detracted from the game's feeling of contemplative strategy.

Understandably this style of game won't appeal to all gamers, but players who value a carefully thought out plan of attack over a Zerg rush will find exactly what they want in Heroes of Might and Magic V. – Maurice Branscombe

TURNED ON, TUNED IN

Timothy Leary would have liked the Belkin Tunecast Auto. The '60s counterculture icon's exhortation to "turn on, tune in, drop out" would be an ideal slogan for this in-car FM transmitter for the iPod. In this case, however, "drop out" means drop out of the world of traffic hassles and into your (Pod's library.

This compact unit has two memory slots, for FM frequencies up to a make the broadcast your iPod music. It works well, delivering a clear, strong signal to your in-car sterce, and it powers and charges your iPod as you listen. The blue-backlit tuning screen and velor o cable ties are nice touches. Simply plug the funesats Auto into your car's digarette-lighter socket and iPod's dock connector, then tune it to a neutral station on your FM radio for commercial-tree audio fun. A lot safer than speckhedic drugs. Timothy.

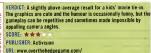


BELKIN TUNECAST AUTO

PRICE: \$89.95 VENDOR: Belkin

URL: www.belkin.com/au/





PRICE: 30 (PC), \$50-\$80 (Console) PC/PS2/Xbox/NGC Over the Hedge

If your brood is still clamouring for more of their favourite characters after seeing Over the Hedge the movie (RJ the raccoon, Verne the turtle, Hammy the squirrel and Stella the skunk), then this game will give them just that — and hopefully buy you a bit of quiet time as well.

You can play as any of the four key characters, taking them through 38 game levels that will see you rescuing friends, planning food heists and avoiding the attentions of the movie's major bad guys, Dwayne the exterminator and Vincent the bear. While the playable characters have different attacks, there's no huge difference in gameplay between any of them, and the game also includes the inevitable "unlockables", like different hats, mini games, scenes from the movie, music tracks and cartoons.

BIN THERE, DONE THAT

Looking more like a high-ted pedal bin than a standalone digital media player, Divisio sher VIVI M-8000A can handle allowate any format you can throw at it for in it, if you want to stretch the bin metaphor a little further). This includes DIVIS (and ISO images, complete with mena navigation), high-definition WIVH-filles, and even forotage from the new HDV format camcorders, though not Quicktime MDVs, one of the few formats that the Sizem. MEMS2 I chipsets card handle.

Your files can be transferred to the internal drive — which you'll have to source and install yourself — via USB 2.0, or streamed from a PC across a ID/100 Cthernet connection. Dutputs include component and DYI-I video but no HDMI, and the IDE interface used by the hard disk will limit future upgrades. It runs quietly, and while the display is large and animated, it's not briefle neough to be distracting.



There's a considerable amount of hitting things with various weapons (golf clubs, hockey sticks, spades etc.) and eating junk food like pizza and nachos, which may not be to every parent's taste, but the humour is far from offensive and no blood is ever spilt. In fact, much of the time, you're releasing Dwayne's unwitting captives from their electronic slavery.

But you can't expect too much from Over the Hedge. Level design is a bit basic, and the camera control can be absolutely atrocious at times.

- Laurence Grayson



VICO TVIX HD M-5000A

PRICE: \$649.95 VENDOR: Lako Pacific URL: www.lakopacific.com.au

SEPTEMBER 2006 AUSTRALIAN PC WORLD | 143

BYTESBACK

In which Dr. Backbytes finds himself wishing that he wasn't dealing with Optus and reaffirms his dislike for call centres.

I should be more sympathetic to call centre workers — though it pains me to admit it, I used to be one myself! — but they're a deceitful bunch. If my own sordid experiences as a call handler are anything to go by, call centre employees usually know they're lying; they just lack the time, information or freedom to tell you the truth.

Give me the simple life

Take Julie, for example. She works the phones at one of Optus' call centres. Part of her job is to answer the call of anyone who's managed to navigate the seven levels of IVR (the universally-loathed "press one if you need..." system) only to be told, after being on hold for half an hour, that they've come through to the wrong department. "I'll just transfer you to the right department," she brightly chirps, "It won't take a moment." She's lying, of course.



Optus. Monkeys. I could say something here, but I won't.

It takes another twenty minutes (and four replays of the "your call is important to us" message), before I'm through to Stephen, who is today's unlucky winner of the Really Tetchy Customer award. He doesn't know, until I tell him, that this call represents my tipping point. He is blissfully unaware that since placing an order for Optus' DSL Direct service. I have been misinformed twice about delivery

dates — leading to wasted days off work — and been kept on hold for a total of two and a half hours while I try and find a simple answer to a simple question: where's my damp horadband?

I don't even bother mentioning how I've been cut off twice (which is often a deliberate move by a call centre manager trying to deal with out-of-control call waiting times) and even forwarded to a recorded message telling me that the department's opening hours are between 9am and 6pm, which played twice and then cut me off again.

Stephen takes my details and then puts me on hold for a further ten minutes — which does nothing to improve my already festering mood. When he returns, it not with good news. Apparently, Telstra has rejected the order because Optus used 77 as my street number, and Telstra has it down as 81. It's actually 77-81, but apparently, neither system can handle such unprecedented address complexity.

When questioned about why I had to call Optus to find this out, Stephen admits that the refusal occurred some time ago, (step 4 in a 14-step procedure, apparently), but the employee who goes through the spreadsheet of order refusals hadn't yet got to mine, leaving my order in limbo until I called.

The end result is an order that's back to square one (or square four, in this case), along with promises of "close monitoring" and the first month for free (assuming that I ever get the service installed). But another two weeks of waiting.

I'll let you know next month if they manage to stand by these promises. Or whether they just lied again.

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AG Neovo23
Altech
Anyware Computers 125, 127, 131
ASUS10, 100
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BaxIT31, 33, 35
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 $^{^{\}rm 1}$ For Microsoft, as it happens. Which is one of the many reasons I shall burn in Heck.

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